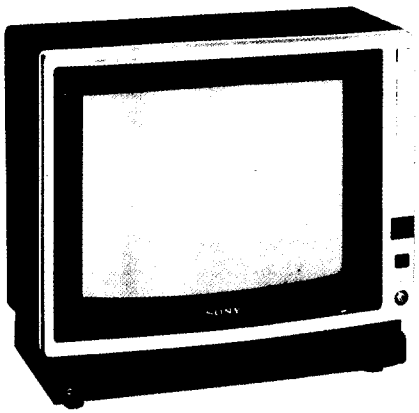
KV-1357R/1358R

RM-714

SERVICE MANUAL



US Model

KV-1357R

Chassis No. SCC-486N-A

KV-1358R

Chassis No. SCC-486O-A

April, 1984

P2A CHASSIS

SPECIFICATIONS

Television system	American TV standards
Channel coverage	VHF : 2 - 13 UHF : 14 - 69 Cable TV : 14 - 36, 98, 99 (a total of up to 14 preselected channels)
Picture tube	Trinitron tube **13-inch picture measured diagonally**
Hit connector	Auxiliary RF input for VHF channels 2 - 6 75-ohm (F-type)
Power requirements	120 V ac, 60 Hz
Power consumption	90 W (max.), 58 W (average) 2.2 W (in standby condition)
Accessories supplied	Remote Commander RM-714 with 2 size AA batteries Indoor telescopic antenna (VHF/UHF) with antenna connector Phono-F plug adaptor Earphone

Design and specifications subject to change without notice.

MICROFILM

TRINITRON® COLOR TV

SONY®

CTV

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REMOTE COMMANDER (RM-714)		
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WARNING!!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD BECAUSE OF LIVE CHASSIS.
THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.
4. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
5. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
6. Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
7. Check the condition of the monopole antenna (if any).
   Make sure the end is not broken off, and has the plastic cap on it. Point out the danger of impalement on a broken antenna to the customer, and recommend the antenna's replacement.
8. Check the B+ and HV to see they are at the values specified. Make sure your instruments are accurate; be suspicious of your HV meter if sets always have low HV.
9. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

HOW TO FIND A GOOD EARTH GROUND

A cold-water pipe is guaranteed earth ground; the cover-plate retaining screw on most AC outlet boxes is also at earth ground. If the retaining screw is to be used as your earth-ground, verify that it is at ground by measuring the resistance between it and a cold-water pipe with an ohmmeter. The reading should be zero ohms. If a cold-water pipe is not accessible, connect a 60–100 watts trouble light (not a neon lamp) between the hot side of the receptacle and the retaining screw. Try both slots, if necessary, to locate the hot side of the line, the lamp should light at normal brilliance if the screw is at ground potential. (See Fig. B)

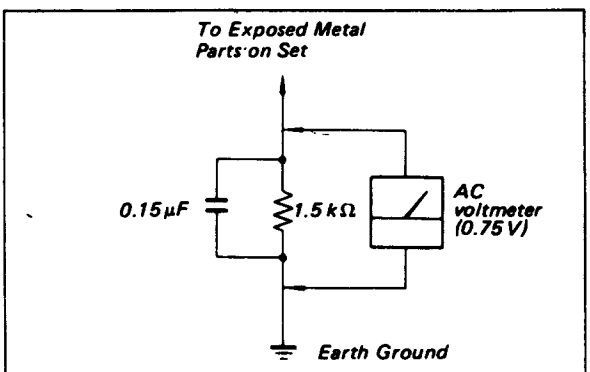


Fig. A. Using an AC voltmeter to check AC leakage.

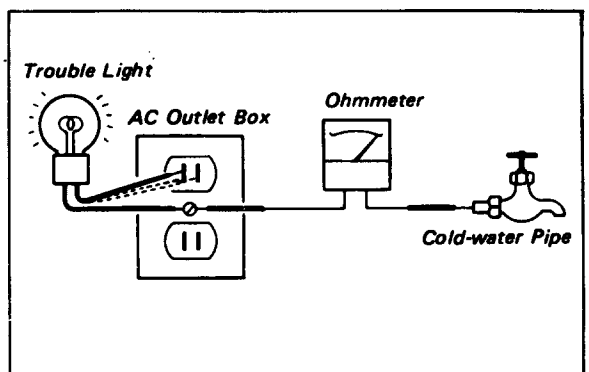
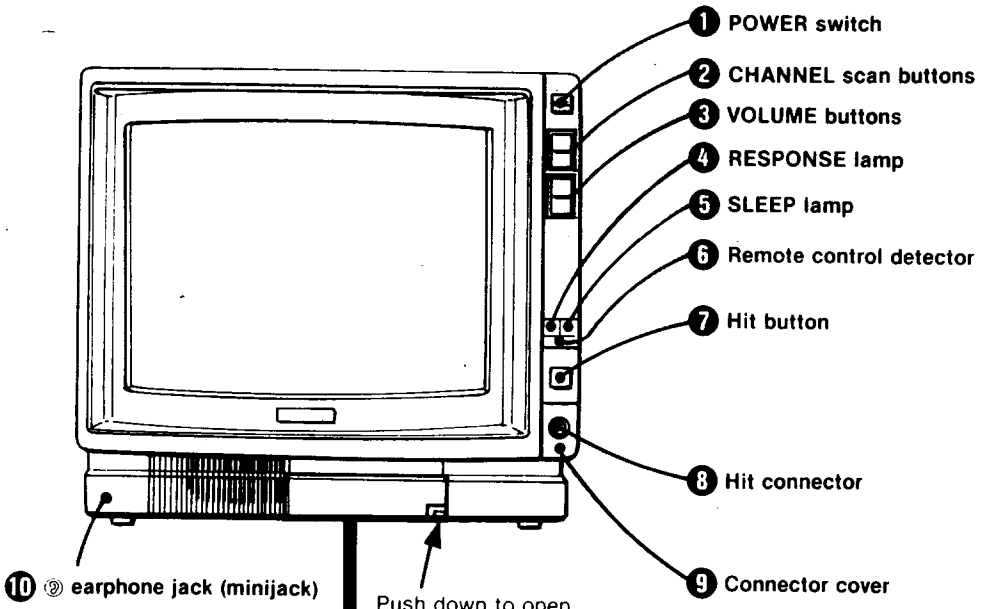
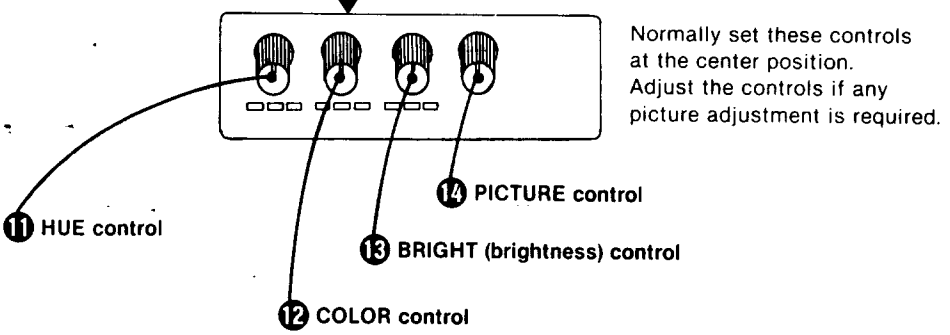


Fig. B. Checking for earth ground.

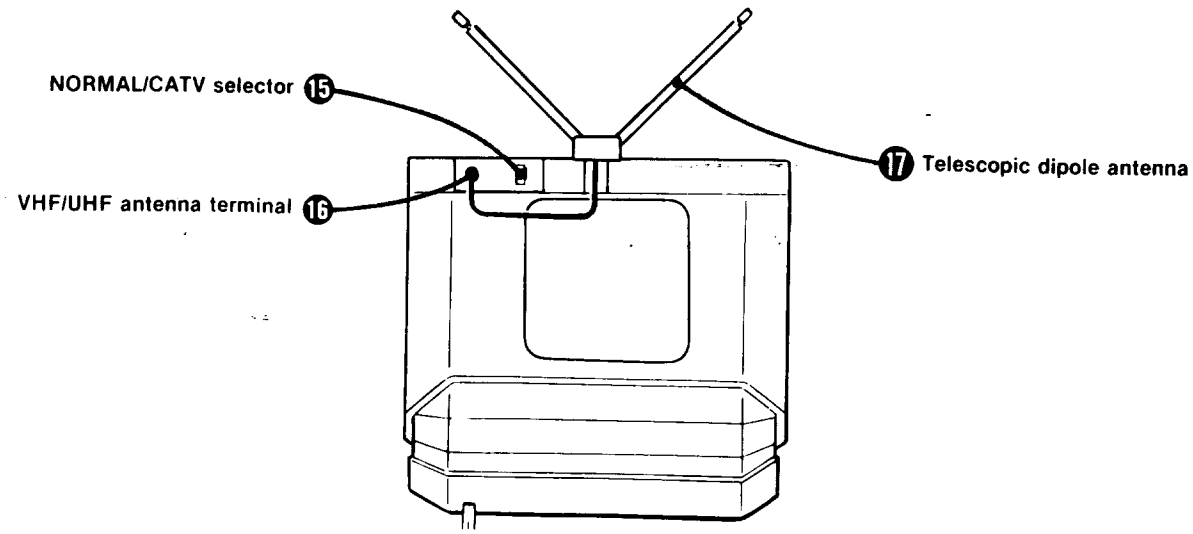
SECTION 1
GENERAL

1-1. LOCATION AND FUNCTION OF CONTROLS

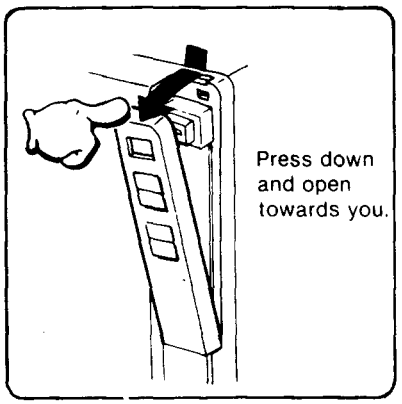


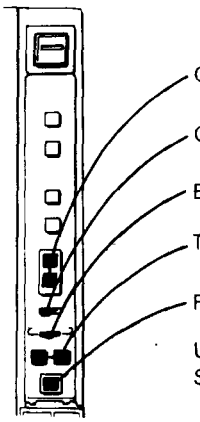


Rear panel



Presetting compartment





Use these switches and buttons to preset channels.
See page 7.

❶ POWER switch
Depress to turn on the TV. Press again to turn it off.
Keep the switch depressed to operate the TV with the Remote Commander.

❷ CHANNEL scan buttons
Press + for higher-numbered channels, or – for lower-numbered channels. The selected channel number will appear on the screen.

❸ VOLUME buttons
Press + to increase the volume and – to decrease it.

❹ RESPONSE lamp
Blinks when the + or – VOLUME button is pressed. At the lowest or the highest volume, or while the sound is muted, this lamp lights steadily.

❺ SLEEP lamp
Lights when the SLEEP button on the Remote Commander is pressed.

❻ Remote control detector

❼ *Hit button*
To view the signal from the Hit connector, press this button. The indication "Hit" will appear on the screen. To adjust the Hit button to match the equipment to be connected, use the controls in the presetting compartment. For the presetting procedure, see Page 8.

❽ Hit connector *(Auxiliary RF input, VHF ch. 2 - 6, F-type)*
Connect an RF output of a home video game, a microcomputer, or a portable video cassette recorder to this connector.

❾ Connector cover
Remove this cover so that the connector fits firmly, if required.

❿ earphone jack (minijack)
For private listening, insert an earphone plug into the jack. This disconnects the loudspeaker. Adjust the TV volume to a normal listening level.

⓫ HUE control
Turn clockwise for greenish skin tones, and counterclockwise for purplish skin tones.

⓬ COLOR control
Turn clockwise for more color, and counterclockwise for less color.

⓭ BRIGHT (brightness) control
Turn clockwise for more brightness, and counterclockwise for less brightness.

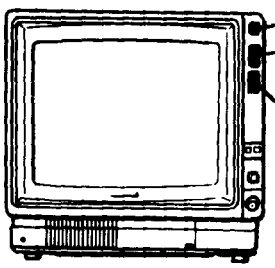
⓮ PICTURE control
Turn clockwise to increase contrast to a vivid color, and counterclockwise to decrease contrast to a soft color.

⓯ NORMAL/CATV selector
For VHF and UHF channel reception, set the selector to NORMAL. For cable TV channel reception, set it to CATV.

⓰ VHF/UHF antenna terminal
Connect a VHF/UHF antenna or a CATV cable here.

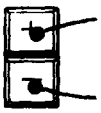
⓱ Telescopic dipole antenna

1-2. NORMAL TV OPERATION (PANEL OPERATION)



1 **Depress POWER.**
The picture will appear.

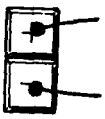
3 **Adjust the volume by pressing + or – VOLUME.**



to increase the volume

to decrease the volume

2 **Select the desired channel by pressing + or – CHANNEL.**

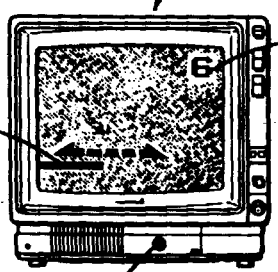


for higher-numbered channels

for lower-numbered channels

The bar indication
will appear on the screen.
As the volume increases, the bar will be longer. This indication will disappear in a few seconds after the adjustment is completed.

ATTENTION !!



The selected channel number
appears on the screen.
To extinguish the channel number, press CHANNEL DISPLAY on the Remote Commander. Then, each time you press CHANNEL + or – to change the channel, the indication on the screen will disappear after a few seconds.

4 **Adjust the picture to your preference using the HUE, COLOR, BRIGHT and PICTURE controls.**

To turn the TV off, press POWER.

For presetting desired channels, see pages 7 – 9.

1-3. CHANEL PRESETTING

Each of the 14 channel positions of your set can be set to receive any of the VHF channels 2 - 13, UHF channels 14 - 69, and the 25 cable TV channels listed below. The Hit connector can be adjusted to receive any of the VHF channels 2 - 6 according to the type of equipment (RF output) to be connected. It is factory-adjusted to channel 3.
To set desired television broadcast channels or to readjust the channel received by the Hit button, follow the instructions in "PRESETTING PROCEDURE" on the next page.

NOTE
If you own a video cassette recorder, we recommend that you not cancel channel 3 or 4 — whichever is inactive in your area — but use it to receive signals from the video cassette recorder.

BEFORE SETTING CHANNELS
Before setting your desired channels, check that the NORMAL/CATV selector on the back of your set is in the correct position according to what you have connected to your set.

If you have connected a ···	set to ···
VHF and/or UHF antenna(s)	NORMAL
CATV cable	CATV

Cable TV channel chart *
Cable TV systems use letters or numbers to designate channels. To tune in a channel, refer to this chart.

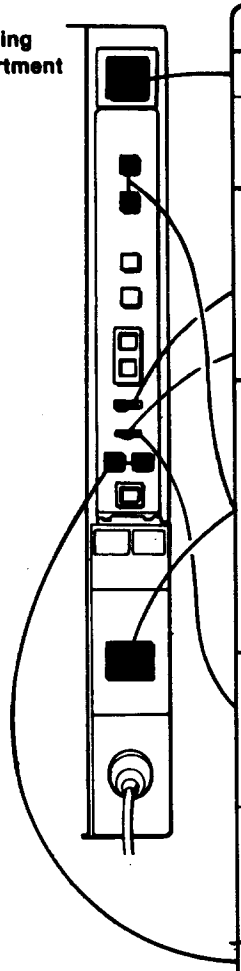
Mid-band channels		Super-band channels	
A-2	98	J	23
A-1	99	K	24
A	14	L	25
B	15	M	26
C	16	N	27
D	17	O	28
E	18	P	29
F	19	Q	30
G	20	R	31
H	21	S	32
I	22	T	33
		U	34
		V	35
		W	36

Not all cable TV channels listed will be active in your area. Check with your local cable TV company for more complete information on the available channels.

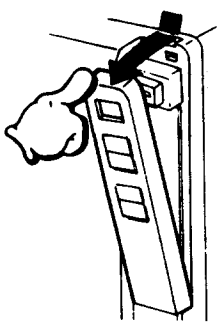
* The designation of the cable TV channels conforms to the EIA/NCTA recommendation.

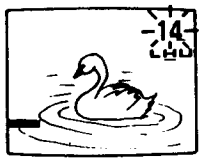
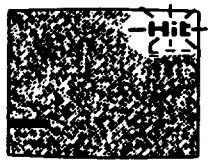
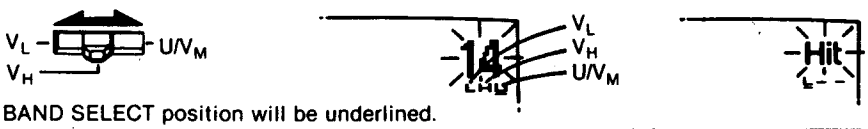
PRESETTING PROCEDURE

Presetting compartment



Remove the lid and expose the switches and buttons.

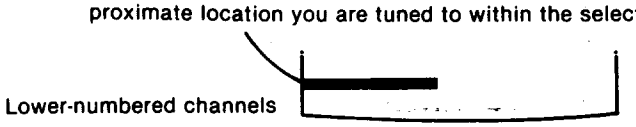


CHANNEL scan buttons	Hit button
1 Depress POWER.	
——	Turn on the equipment connected to the Hit connector. (If it is a VCR, play back a prerecorded tape.)
2 Set CHANNEL SET to ON. The selected program position number should blink with the picture of the presently set channel. If the picture turns black or into snow, set BAND SELECT to either of the remaining 2 positions so that the number blinks clearly.	
3 Select the channel position to be preset with CHANNEL scan buttons.  The selected position number should blink. If the number cannot be identified, reset BAND SELECT as in step 2.	Press Hit. The Hit indication should blink. 
4 Set BAND SELECT to one of the three positions : V_L : for VHF 2 6 V_H : for VHF 7 13 and cable 23 36 U/V_M : for UHF 14 69 or cable 98, 99, 14 22	Band V_L will be selected regardless of the BAND SELECT setting.
 Selected BAND SELECT position will be underlined.	
5 Keep + or − TUNING pressed until...	
the clear picture of the desired station is obtained.	the signals fed from the Hit connector are properly tuned in.

TUNING

for lower-numbered channels — (−) (+) — for higher-numbered channels

The length of the bar provides a visual indication of the approximate location you are tuned to within the selected band.



V_L ..... VHF 2 ⟷ 6
V_H ..... VHF 7 ⟷ 13, cable TV 23 ⟷ 36
U/V_M ..... UHF 14 ⟷ 69
or
cable TV 98, 99, 14 ⟷ 22

The RESPONSE lamp lights steadily when the highest- or the lowest-numbered channel within the present band is tuned in.

Repeat steps **3** through **5** for all the channel positions to be preset.	——

6 Set CHANNEL SET to OFF.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.
4. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
5. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
6. Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
7. Check the condition of the monopole antenna (if any).
   Make sure the end is not broken off, and has the plastic cap on it. Point out the danger of impalement on a broken antenna to the customer, and recommend the antenna's replacement.
8. Check the B+ and HV to see they are at the values specified. Make sure your instruments are accurate; be suspicious of your HV meter if sets always have low HV.
9. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAK-AGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

HOW TO FIND A GOOD EARTH GROUND

A cold-water pipe is guaranteed earth ground; the cover-plate retaining screw on most AC outlet boxes is also at earth ground. If the retaining screw is to be used as your earth-ground, verify that it is at ground by measuring the resistance between it and a cold-water pipe with an ohmmeter. The reading should be zero ohms. If a cold-water pipe is not accessible, connect a 60–100 watts trouble light (not a neon lamp) between the hot side of the receptacle and the retaining screw. Try both slots, if necessary, to locate the hot side of the line, the lamp should light at normal brilliance if the screw is at ground potential. (See Fig. B)

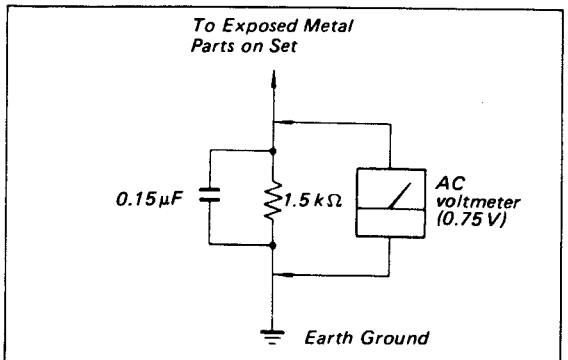


Fig. A. Using an AC voltmeter to check AC leakage.

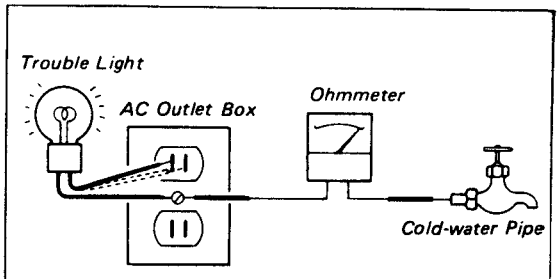
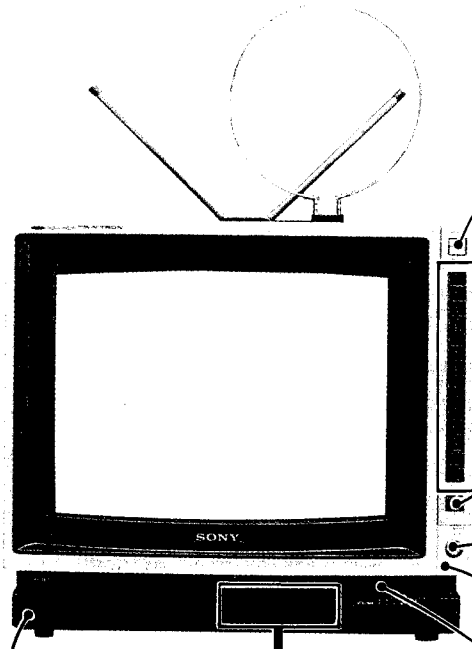


Fig. B. Checking for earth ground.

1. GENERAL

1-1. LOCATION AND FUNCTION OF CONTROLS



POWER switch
Depress to turn on the TV.
Press again to turn it off.

Channel select buttons
Press the desired button to select the channel. The selected channel button will light.

Hit button
To view the signal from the Hit connector, press this button. The indication "Hit" will light. To adjust the Hit button to match the equipment to be connected, use the controls in the presetting compartment. For the presetting procedure, see page 8.

Hit connector (Auxiliary RF input, VHF ch. 2 - 6, F-type)
Connect an RF output of a home video game, a microcomputer, or a portable video cassette recorder to this terminal.

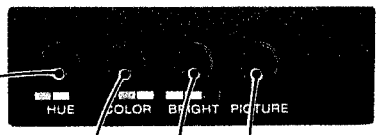
Connector cover
Remove this cover so that the connector fits firmly, if required. Remove also this cover to pull out the channel indicating plate.

VOLUME control
Slide the VOLUME control to the right to increase the volume or to the left to decrease it.

Ⓟ earphone jack (supplied)
For private listening, insert an earphone plug into the jack. This disconnects the loudspeaker. Adjust the TV volume to a normal listening level.

Push down to open.

Normally set these controls at the center position. Adjust the controls if any picture adjustment is required.



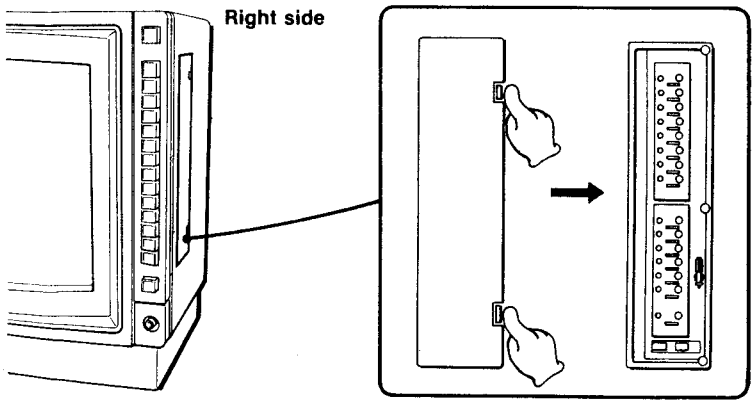
HUE control
Turn clockwise so that skin tones become greenish, and counterclockwise, skin tones became purplish.

PICTURE control
Turn clockwise to increase contrast to a vivid color, and counterclockwise to decrease contrast to a pale color.

BRIGHT (brightness) control
Turn clockwise for more brightness, and counterclockwise for less brightness.

COLOR control
Turn clockwise for more color, and counterclockwise for less color.

Right side



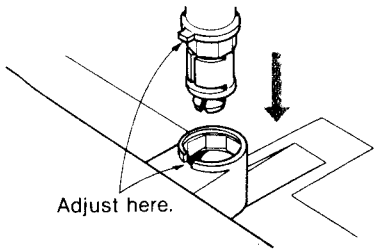
Presetting compartment
All the switches and controls for channel presetting are in this compartment. A tuning aid is attached to the panel for your convenience.
For the presetting procedure, see page 8.

1-2. INDOOR ANTENNA CONNECTION

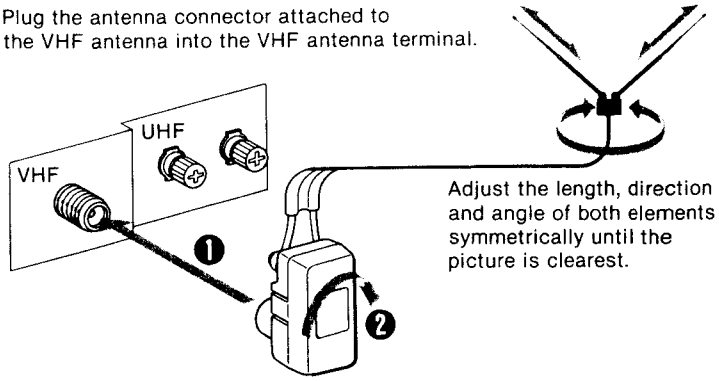
Complete the antenna connection, and then plug the set to the wall outlet.

For VHF reception
Use the supplied VHF telescopic dipole antenna.

1 Insert the projection into the antenna receptacle on the set.

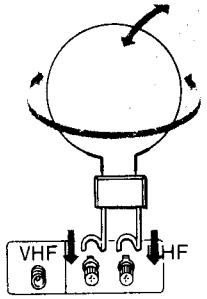


2 Plug the antenna connector attached to the VHF antenna into the VHF antenna terminal.



Adjust the length, direction and angle of both elements symmetrically until the picture is clearest.

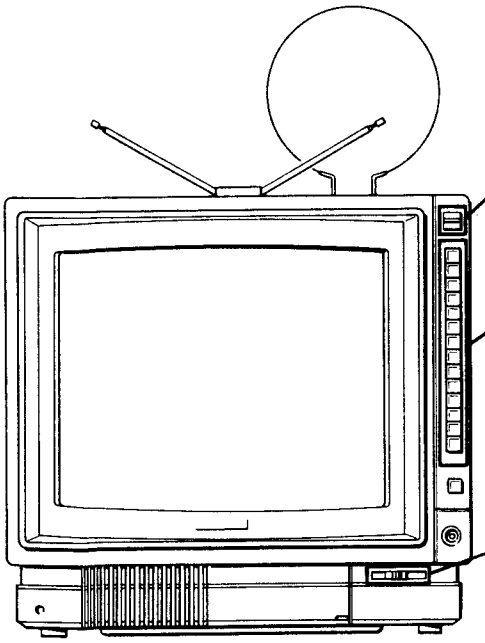
For UHF reception
Use the supplied UHF loop antenna. Connect the lugs to the UHF antenna terminals and fasten with a screwdriver.



Swing the loop back and forth and/or sideways until the picture is clearest.

NOTE
If satisfactory results cannot be obtained with the supplied indoor antennas, install external antennas referring to page 11.

1-3. OPERATION

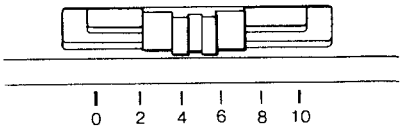


1 Depress the POWER switch.
The picture will appear.

2 Press the desired channel select button.

3 Adjust the volume by sliding the VOLUME control.

To decrease, slide towards 0. To increase, slide towards 10.



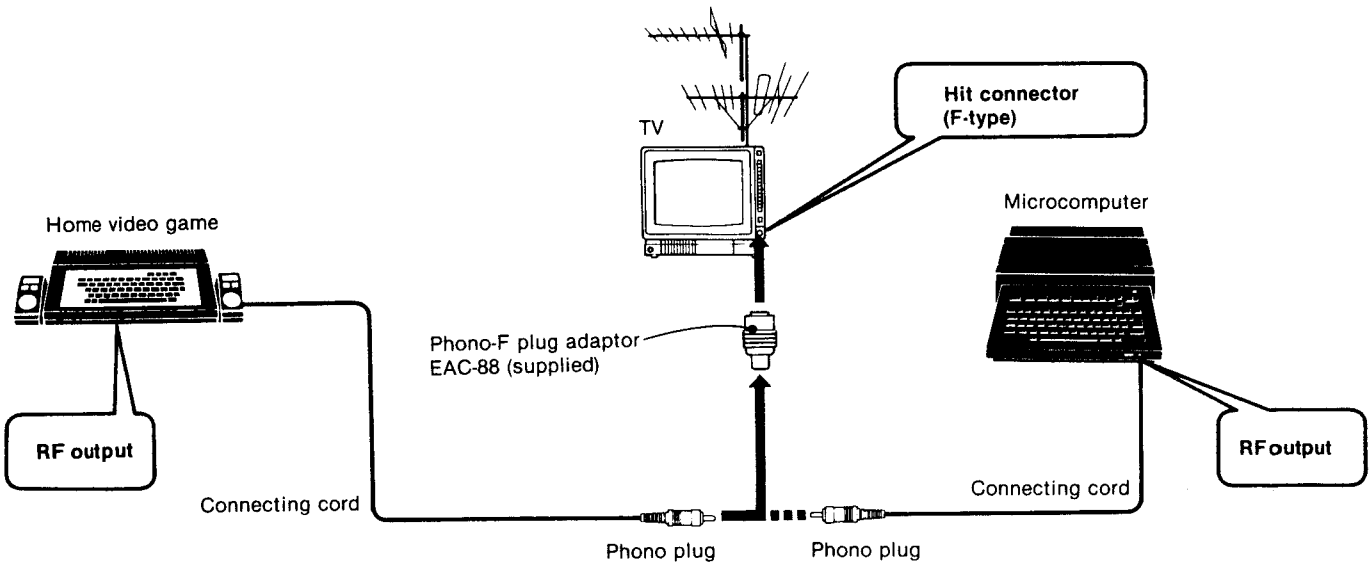
To turn the TV off, press the POWER switch again.

1-4. FRONT PANEL HIT CONNECTOR USAGE

What is the Hit connector?
"Hit" is an abbreviation of Home Interface Terminal.
Hit connector is an RF input for VHF ch. 2 -6, (F-type) which may be used for the easy connection to a home video game, a portable VCR, or a microcomputer. To view the picture of the connected equipment, simply press the adjusted Hit button. You can enjoy the TV set as a display terminal for the connected equipment.

Caution
Unplug the TV and other equipment from the wall outlet before making the connections.

CONNECTION OF A HOME VIDEO GAME OR MICROCOMPUTER



NOTES

- The Hit connector is available for equipment that can deliver RF signal between VHF channels 2 through 6.
- If the microcomputer has been placed on or too close to the TV set, noise will appear on the screen. Keep the microcomputer an appropriate distance away so that the picture appears clear.
- The connection of a microcomputer sometimes causes distorted and noisy pictures. In this case, readjust the controls located in the front panel. When you go back to watching a TV program, readjust the controls again.
- When you go back to watching a TV program, simply select the channel you want to watch. If the picture is distorted, turn off the equipment connected.
- The picture quality obtained by connection to the Hit connector on the front of the TV and to the antenna terminal on the back is the same.
- While watching the TV, when the RF output of equipment connected to the Hit connector is too close to TV broadcasting frequencies, interference will occur. In this case, readjust the equipment's output frequency.
- If the F-type connector does not fit the Hit connector well, remove the connector cover. See page 9.

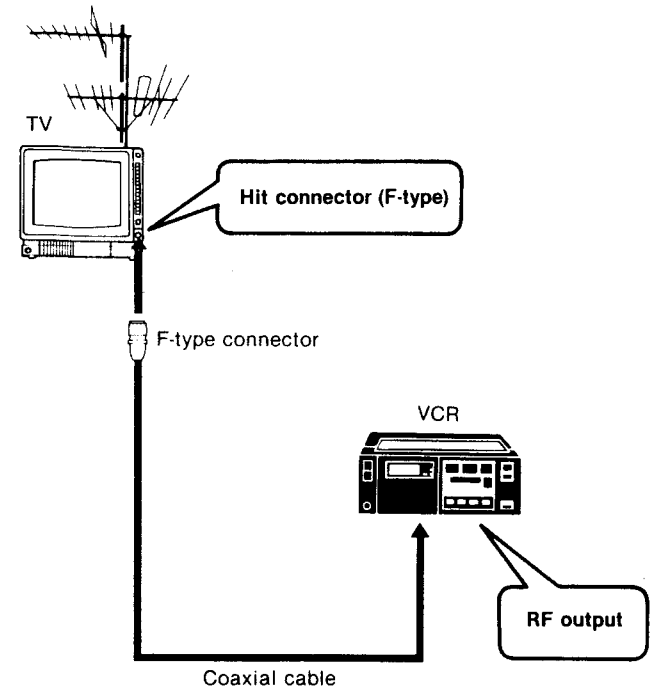
In case that the connecting cord has exposed wires rather than a plug, use an F-type connector. For details on the connection, refer to the instructions of the home video game or the microcomputer.

CONNECTION OF A FULL-SIZE VCR

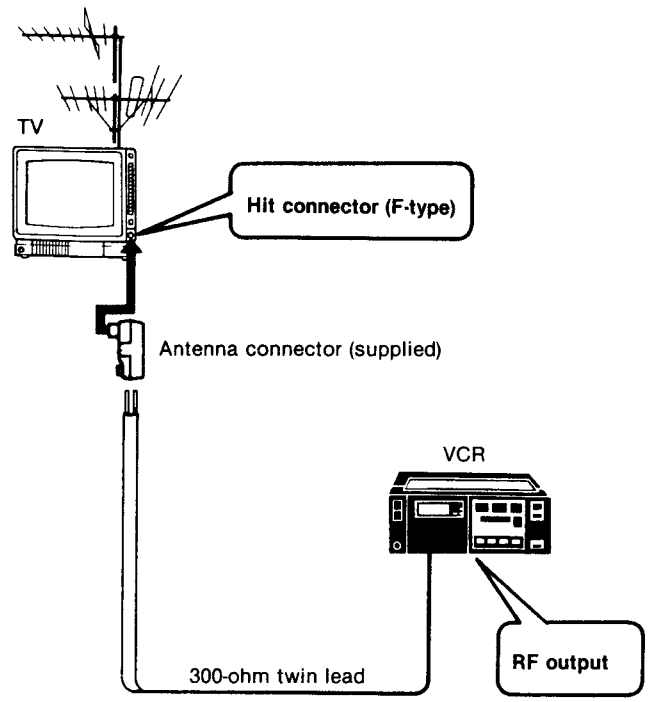
Connect a VCR to the antenna terminal on the TV's back, and connect the outdoor antenna only to the VCR. For details on the connections, see the instructions of the VCR.

CONNECTION OF A PORTABLE VCR

Coaxial cable



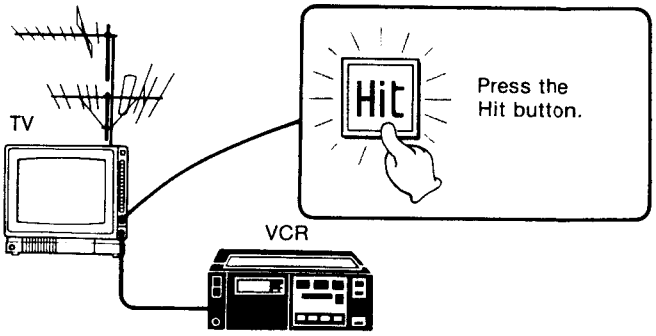
300-ohm twin lead



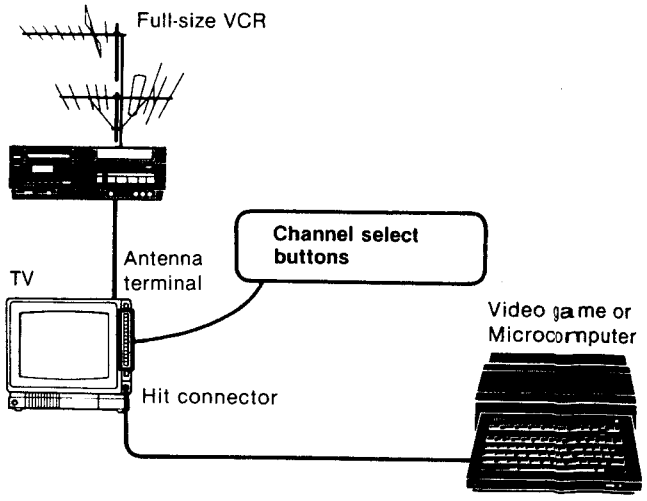
To record the TV program, connect the tuner timer unit (optional) to the antenna terminal on the TV's back panel instead of the Hit connector. For details on the connection, refer to the instructions of the portable VCR or the tuner timer unit.

TO DISPLAY PICTURES FROM EQUIPMENT CONNECTED TO THE HIT CONNECTOR

Simply press the Hit button. The Hit button has been preadjusted to receive VHF channel 3. It is necessary to reset the channel in accordance to the type of equipment (RF output) to be connected. To readjust the channel, follow the instructions described in the "Channel presetting procedure" on page 8.
You can enjoy the pictures of a home video game or microcomputer which is connected to the Hit connector on the front panel, or relay to pictures from your portable VCR.



When you want to watch TV programs or playback picture from the VCR connected to the antenna terminal on the back, press the channel select buttons. If the picture is distorted, turn off the VCR.



1-5. CHANNEL PRESETTING

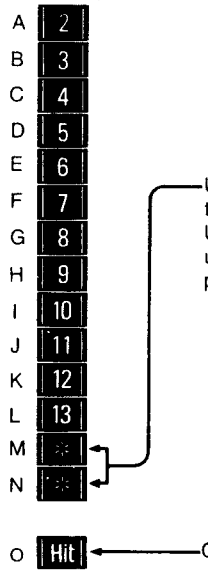
Your Sony TV has been factory-preadjusted to receive VHF channels 2 through 13 when you press the channel select buttons and to receive VHF channel 3 for the Hit button.
When you readjust channels :

- to rearrange channels in your desired sequence
- to add any receivable UHF channels in your area
- to display signals from the equipment connected to the Hit connector on the front panel; follow the instructions of the "Presetting Procedure."

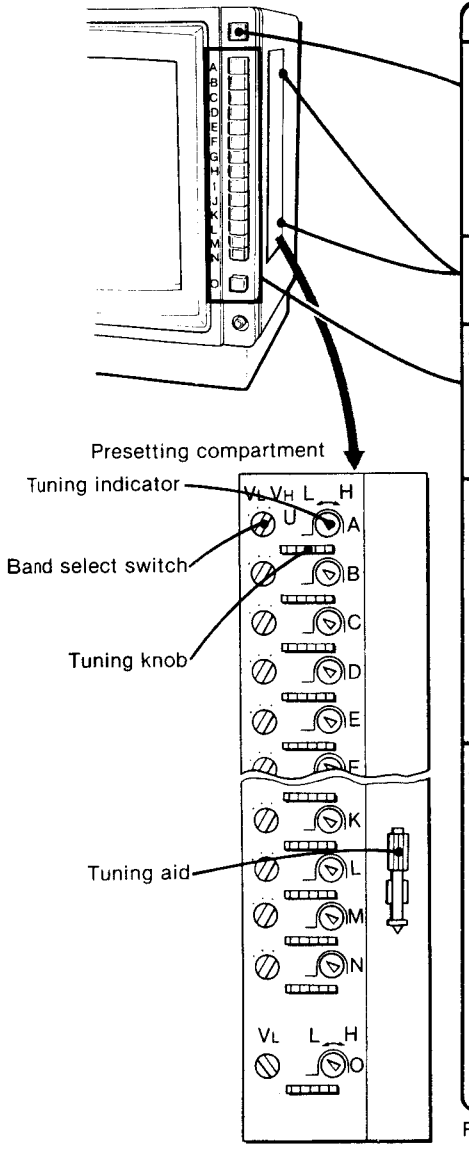
NOTES

- If you own a video cassette recorder, we recommend that you not reset channel 3 or 4 — whichever is inactive in your area — but use it to receive signals from the video cassette recorder.
- Readjust the VHF channel (ch. 2 -6) of the Hit button according to the type of equipment (RF output) to be connected.
- To use your TV set with a cable television system, contact a representative of the cable company for instructions regarding channel selection.

Factory preset



PRESETTING PROCEDURE

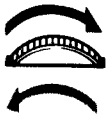


Channel select buttons	Hit button
1 Depress the POWER switch.	ON / OFF
	Turn on the equipment connected to the Hit connector (Play back a prerecorded tape if it is a VCR.)
2 Pull the tabs to remove the compartment lid and expose the controls.	
3 Select the channel to be preset.	Press the Hit button.
Use the controls having the same letter as the selected channel button.	Use the controls having the letter 0.
4 Using the supplied tuning aid, set the band select switch to one of these three positions: VHF channels 2 through 6...set to VL VHF channels 7 through 13...set to VH UHF channels 14 to 83...set to U	The band select switch of the letter "0" is fixed to VL (VHF ch. 2 - 6). Do not attempt to turn the band select switch.
5 Turn the tuning knob until...	
the desired station...	the signals fed from the Hit connector...
is properly tuned in.	
The tuning indicator provides a visual indication of the approximate location you are tuned to within the selected band. L (to the left) for lower-numbered channels H (to the right) for higher-numbered channels	

Repeat steps 3 through 5 for all the channel positions to be preset.

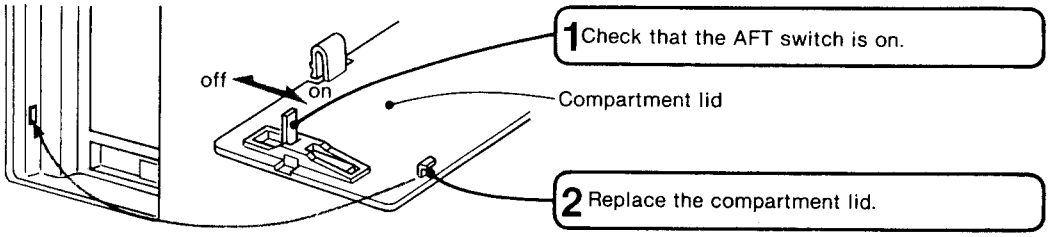
FINE TUNING

When the picture appears, slowly turn the tuning knob to the right until a herringbone pattern appears in the colored part of the picture. Then turn it in the opposite direction until the herringbone pattern just disappears and the picture becomes clear. This is the correct tuning point.



Next
TV station

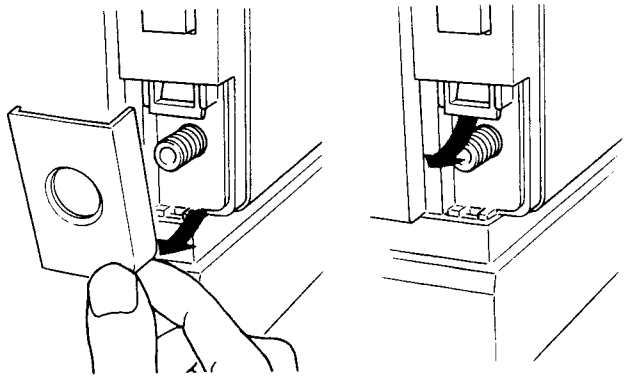
When the adjustment has been completed,



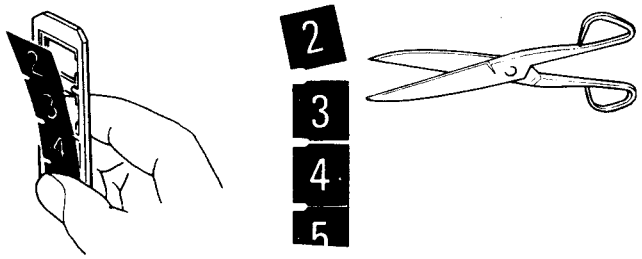
The AFT (Automatic Fine Tuning) circuit then locks in the received signal and maintains the best possible picture.

TO REPLACE THE NUMBERS

1 Remove the connector cover and pull out the channel indicating plate from the channel window.

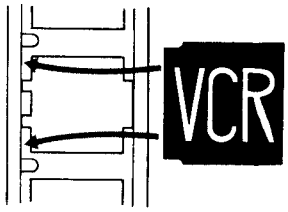


2 Remove the numbers and cut off any unnecessary numbers.

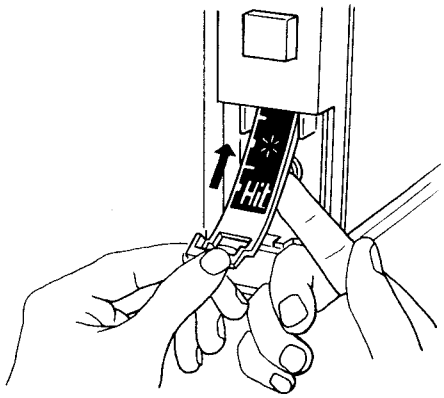


3 Insert the new number(s) selected from the supplied number segment set in the appropriate position(s).

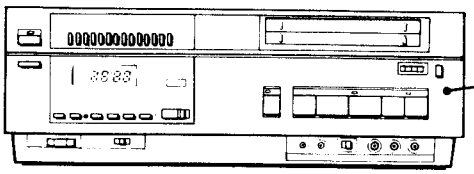
An asterisk (*) segment may be used to indicate an inactive channel.



4 Replace the plate in the channel window. Handle the plate carefully so that you not drop the segment from the plate.



SETTING A CHANNEL ON THE TV FOR THE RECORDER

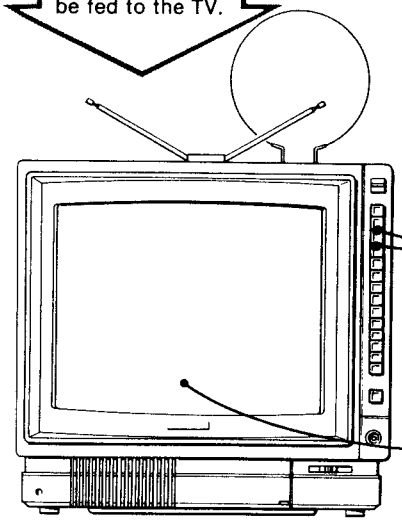


1 **Adjusting the recorder**
Set the rf unit channel selector to channel 3 or 4, whichever channel is not active in your area.

2 **If you have a recorded tape**
Set the recorder to the playback mode.

2 **If you do not have a prerecorded tape**
Set the TV/VCR selector to VCR and select an active channel with its channel select button on the recorder.

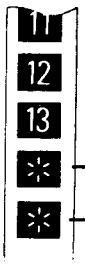
The signal from the recorder will be fed to the TV.



3 **Adjusting the TV**
Select VHF channel 3 or 4* whichever corresponds to the recorder setting.

The playback of a recorded tape or a TV program selected with the recorder channel select button will appear.

If a picture does not appear on the TV screen or if the display is not clear, perform the usual presetting procedure (see page 8).



*If you have cancelled channel 3 or 4, any other unused position may be used.

To preset channel 3 or 4 in any other unused position, proceed as follows.

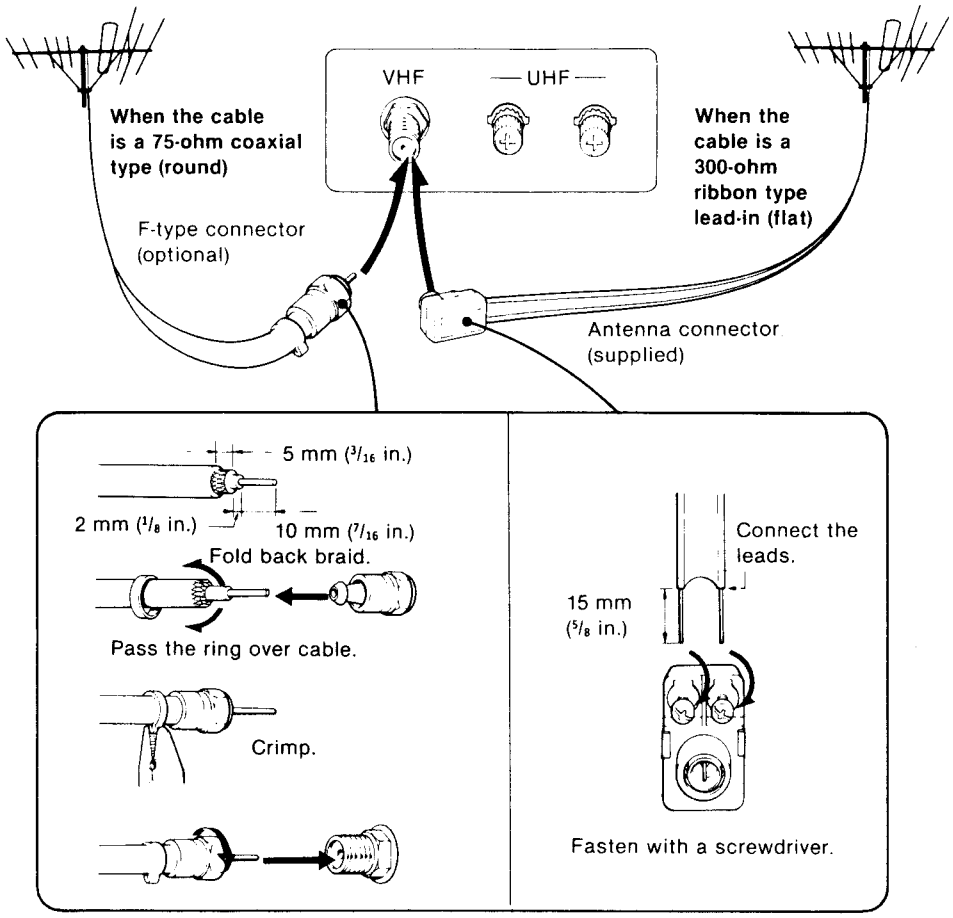
1 Open the presetting compartment lid and select the position to be preset.
2 Set the band select switch to VL.
3 Turn the tuning knob until the playback picture or the TV program selected with the recorder's channel select button is clearest.
4 Close the compartment lid.

1-6. EXTERNAL ANTENNA CONNECTION

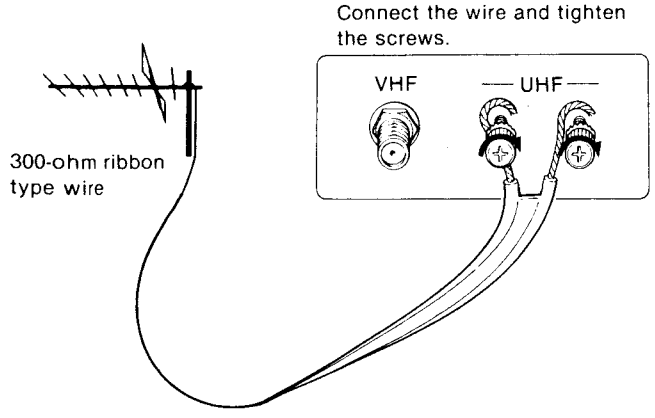
The indoor telescopic dipole antenna and loop antenna will provide good reception in most reception areas. If you cannot obtain satisfactory reception with them, the use of an outdoor antenna is recommended.

1 Remove the indoor antennas from the antenna terminals of the TV.
2 Connect an external antenna to the VHF or(and) UHF antenna terminal(s) corresponding to its form.

VHF antenna

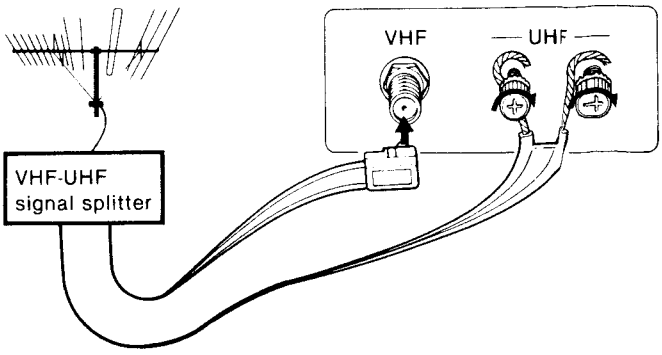


UHF antenna



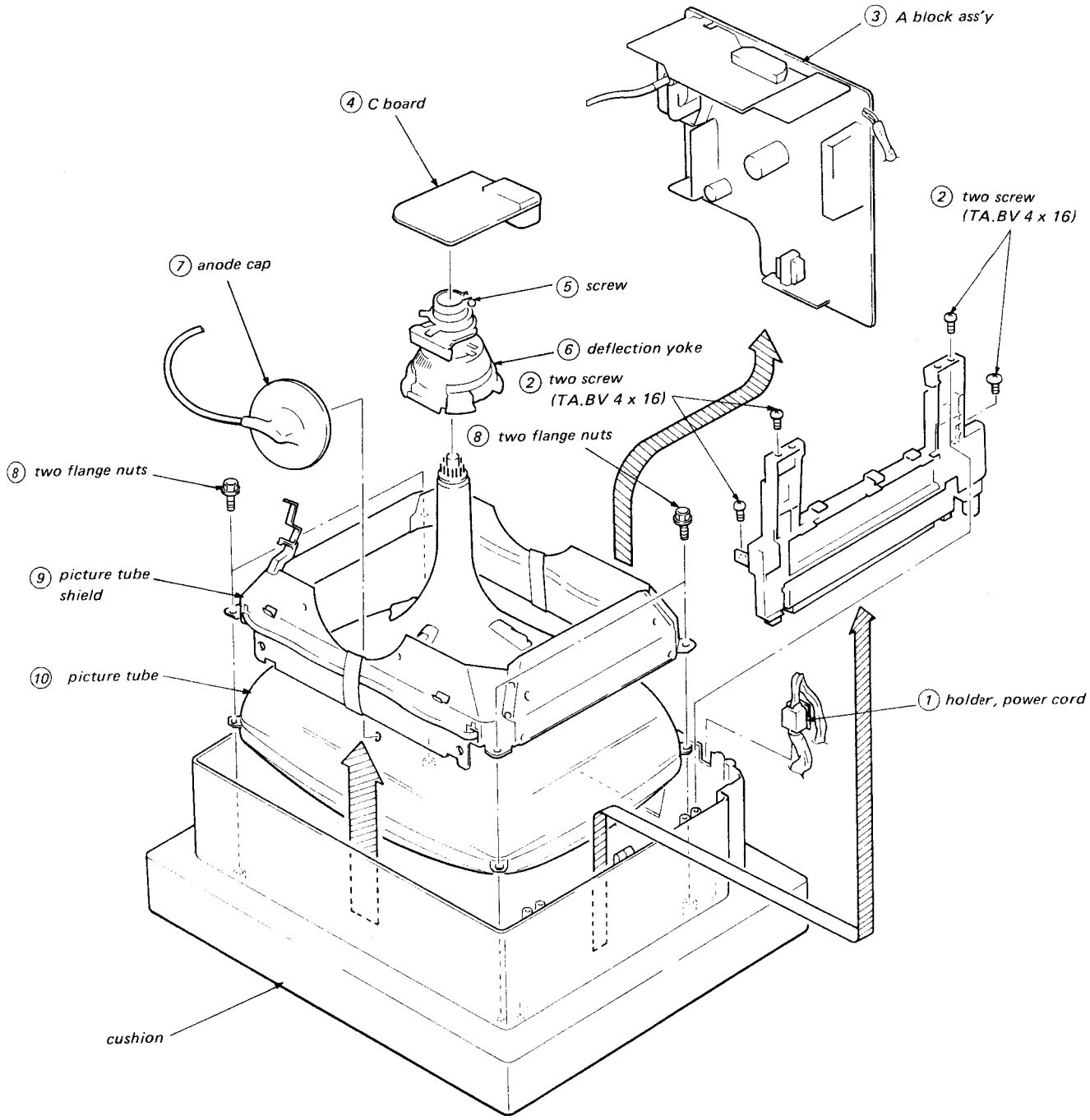
Combination VHF/UHF antenna

Most combination antennas already have a signal splitter. If you need a splitter or a complete antenna system, see your Sony dealer or a qualified technician.



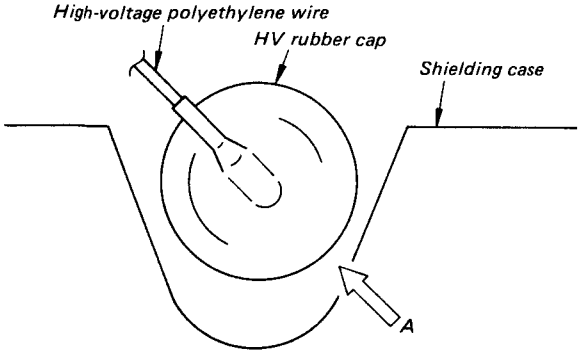
2. DISASSEMBLY

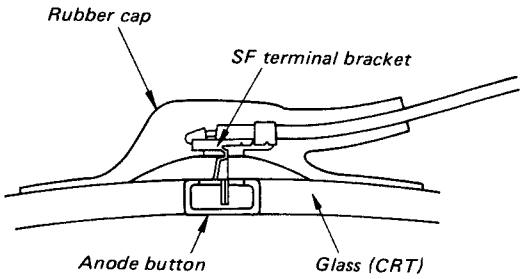
2-1. PICTURE TUBE REMOVAL

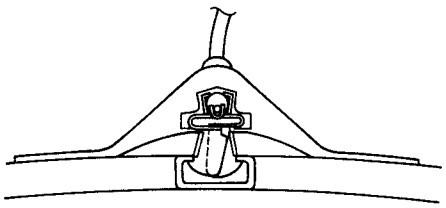


2-2. REMOVAL OF ANODE CAP

- **Anode Cap Structure**

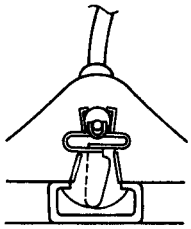




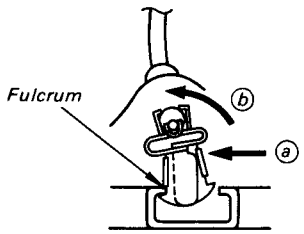


Cross section viewed from the arrow A

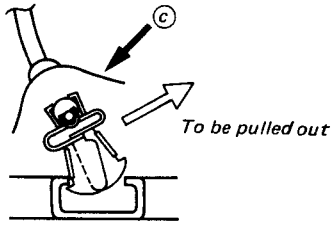
- **Removal of SF Terminal**



Normal inserting position

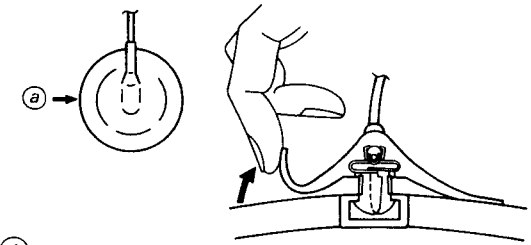


When pushing in the direction indicated by the arrow ⓐ, the SF terminal tilts toward the fulcrum side due to the spring characteristic.
Remove it by pulling up in the direction indicated by the arrow ⓑ with the SF terminal tilted.

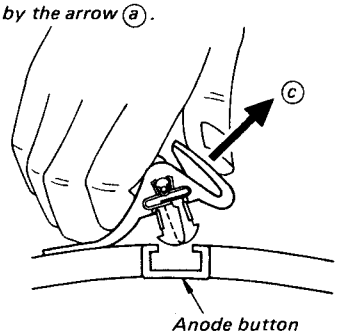


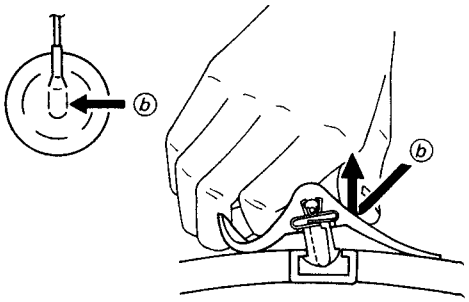
Tilt the SF terminal in the direction of the arrow ⓒ and pull out it in the direction (of 45°) indicated by the arrow.

- **Removing Procedures**



ⓘ *Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ.*





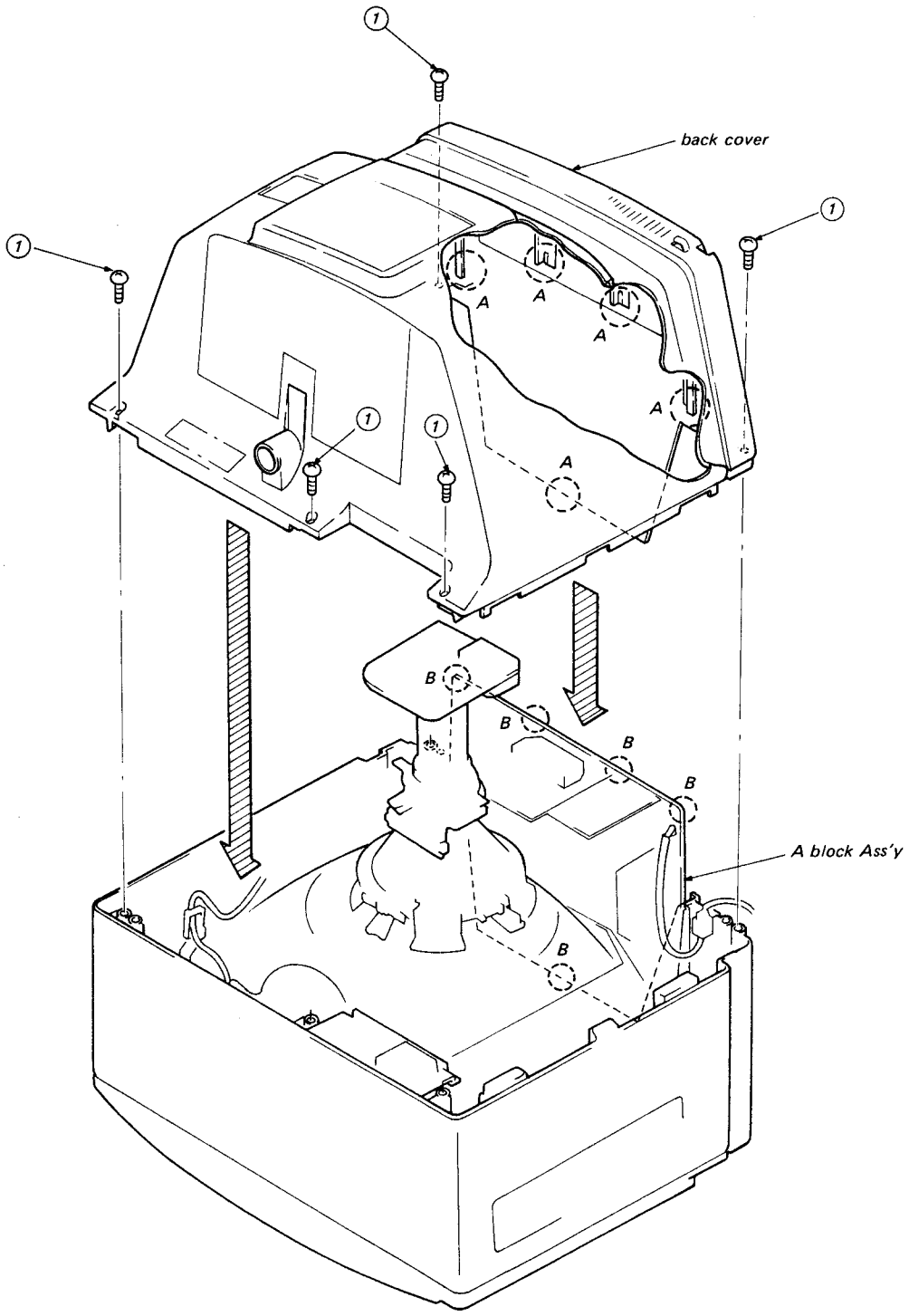
ⓘⓘ *Using a thumb, pull up the rubber cap firmly in the direction indicated by the arrow ⓑ.*

ⓘⓘⓘ *When one side of the rubber cap is separated from the anode button, the anode cap can be removed by turning up the rubber cap and pulling up it in the direction of the arrow ⓒ.*

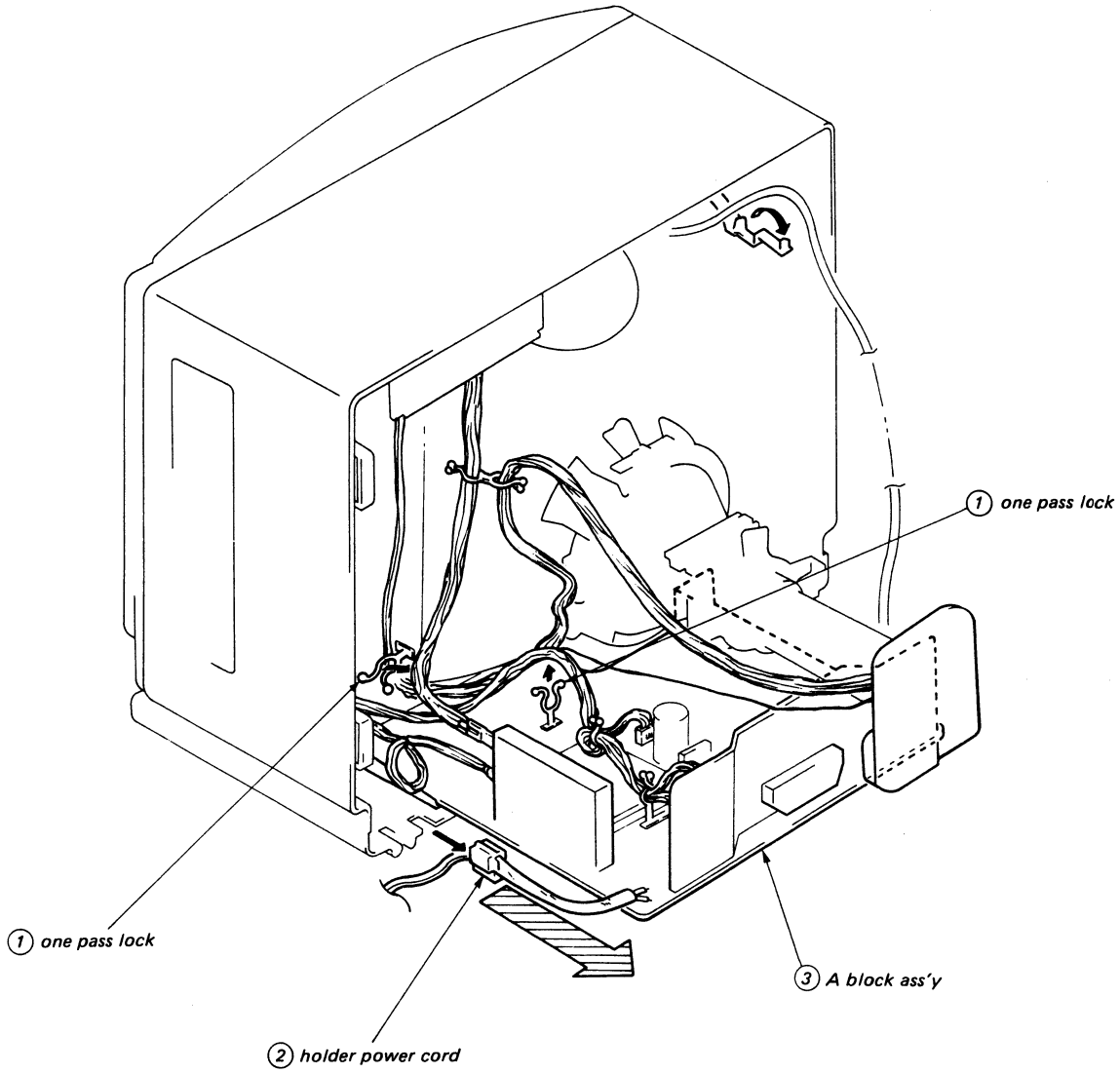
2-3. INSTALLATION OF BACK COVER

① Install the back cover by using the five screws (BVTA 4 x 16)

Note: Insert each section A of the back cover into the section B of the A block Ass'y.

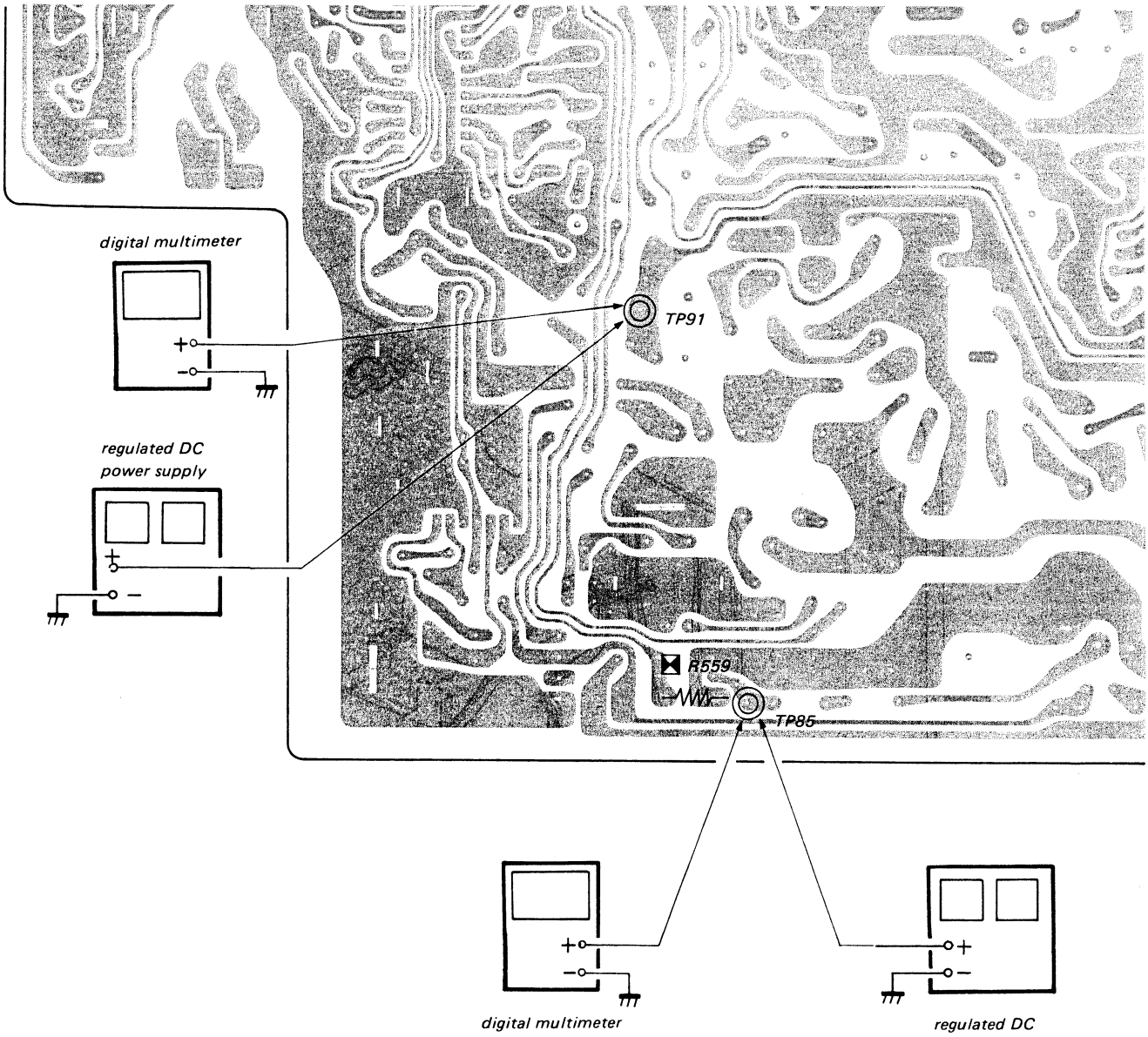


2-4. A-BLOCK ASSEMBLY REMOVAL



3. SAFTY RELATED ADJUSTMENTS

[A BOARD]



⋈R559 ADJUSTMENT (HOLD DOWN)

When replacing the following components (marked with ◪ on the schematic diagram), perform the adjustment as follows:

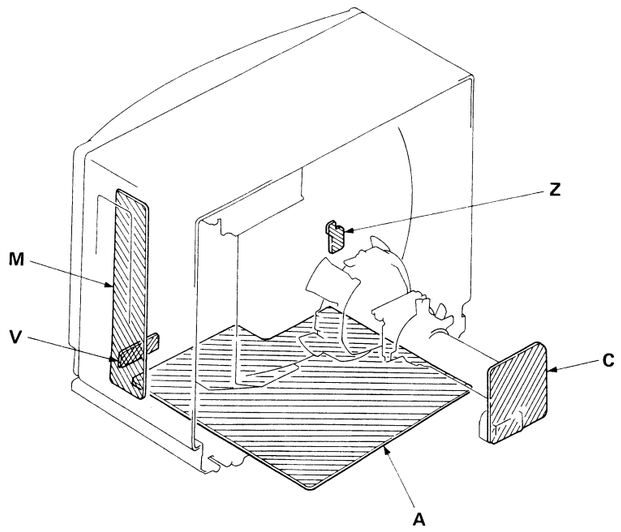
(IC501 D502 D512 R538 R544 R543 R539 R542 R541 R559 C553 C535)

[Adjustment]

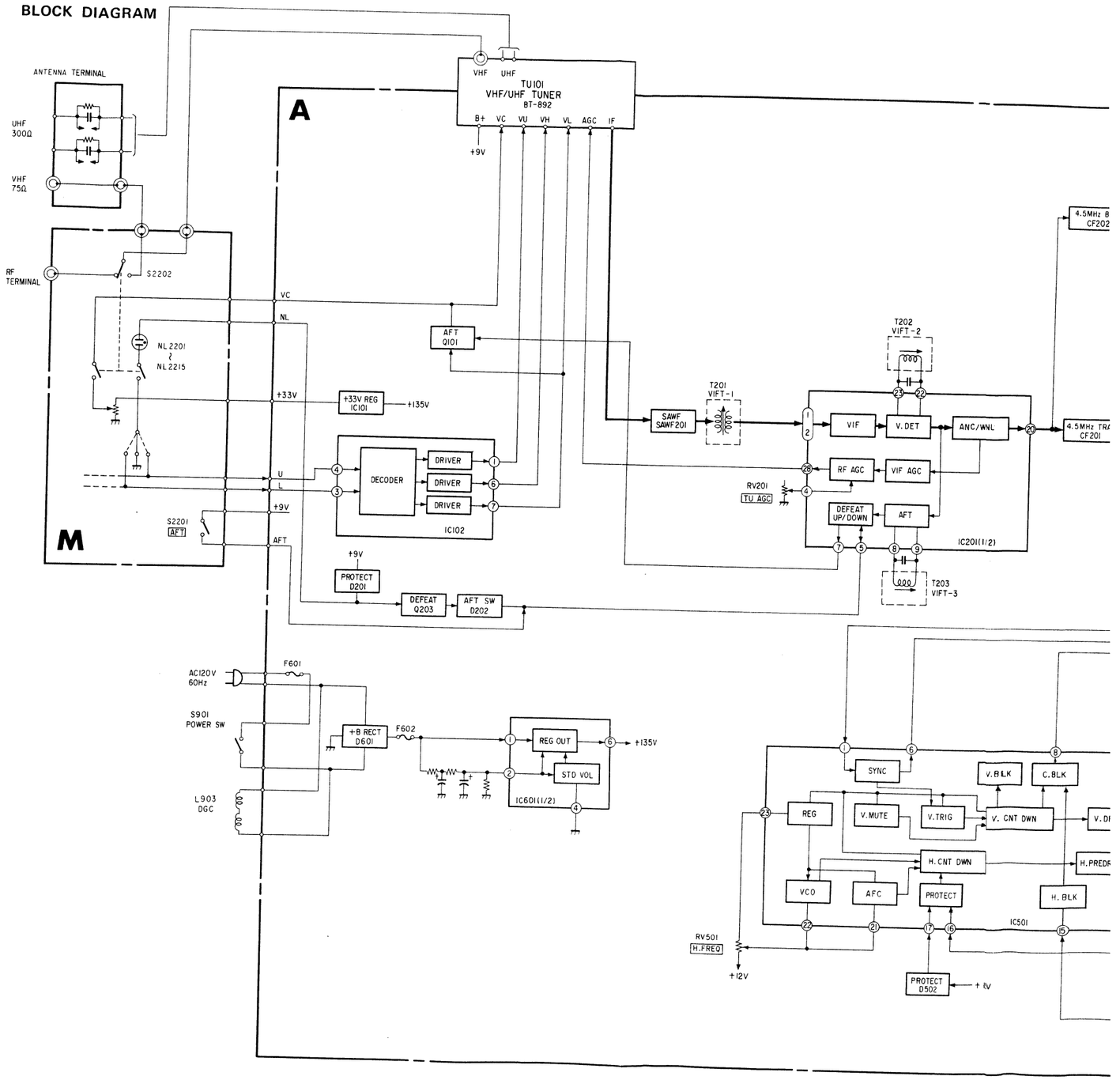
1) *Receive the monoscope signal.*
   Set PIC VR at the center click position.
   Set BRT VR at the center click position.
2) *+B voltage check.*
   Confirm that the +B voltage (at TP91) is 137.0V or less during input of 130V AC.
3) *Protector voltage check.*
   confirm that a voltage of 19.1 ± 1.2V appears between TP85 and GND during input of 120V AC.
4) *Operation check.*
   Confirm that the hold-down circuit operates (the raster disappears) by adding 22.95 $^{+0}_{-0.05}$ V DC between TP85 and GND.
5) *Receive the dot signal.*
6) *Short-circuit between pins (1) and (6) of IC601.*
7) *Error operation check.*
   Confirm that the hold-down circuit does not operate by adding 140 ± 1V DC to +B voltage (at TP91) to change over the CH.

4. DIAGRAMS AND CIRCUIT BOARD LOCATION

CIRCUIT BOARDS LOCATION



BLOCK DIAGRAM



GRAM

A

TU101
VHF/UHF TUNER
BT-892

VHF UHF

B+ VC VU VH VL AGC IF

+9V

S2202

VC

NL

NL 2201 ~ NL 2215

+33V

+33V REG IC101

+135V

U

L

+9V

S2201 AFT

AFT

DECODER

DRIVER

DRIVER

DRIVER

IC102

AFT Q101

+9V

PROTECT D201

DEFEAT Q203

AFT SW D202

SAWF SAWF201

T201 VIFT-1

T202 VIFT-2

T203 VIFT-3

VIF

V.DET

ANC/WNL

RF AGC

VIF AGC

RV201 TU AGC

DEFEAT UP/DOWN

AFT

IC201(1/2)

4.5MHz BPF CF202

SIF

DISRI

AF

IC201(1/2)

CF203

DRIVE

AF OUT

IC601(1/2)

T251 SOT

(USER CONTROL)

V

RV401 VOLUME

SP901

Z

J401 EARPHONE

RV306 PIC

RV307 MUE

RV308 COLOR

RV304 BRT

RV303 COLOR LEVEL

+12V

DL301

RV301 SUB CONT

4.5MHz TRAP CF201

VIDEO AMP Q201

T301 BPT

BUFFER

B.P. AMP

ACC

BURST GATE

AUTO / NOMUAL

SHAP CTL

PEDESTAL CLAMP

ABLBRT CTL

C.CTL

DEMO

1/4

14.3MHz OSC

R.G.B MATRIX

BLK

IC301

CV301 COLOR SYNC

X301

C

H. STAT

R. OUT

G. OUT

B. OUT

CV.

V901
A34JBU00X
PICTURE TUBE

AC120V 60Hz

F601

S901 POWER SW

L903 DGC

+B RECT D601

F602

REG OUT

STD VOL

IC601(1/2)

+135V

SYNC

V.BLK

C.BLK

REG

V.MUTE

V.TRIG

V.CNT DWN

V.DRIVE

H.CNT DWN

H.PREDRIVE

VCO

AFC

PROTECT

H.BLK

IC501

RV501 H.FREQ

+12V

PROTECT D502

+15V

IC502

V.OUT

PLS WD

PONP.UP

+25V

V. BOOST D501

H.DRIVE Q501

T501 HDT

H.OUT Q502

H.WIDTH

H.CENT

L C R

N C W

G2 RECT D513

+135V

T503 FBT

+25V RECT D514

+15V RECT D508

PROTECT D512

+135V

+135V

+190V RECT D511

+190V

V.DY

V DY

H.DY

H.DY

800V

N1

H2

HV

V.COIL

H.COIL

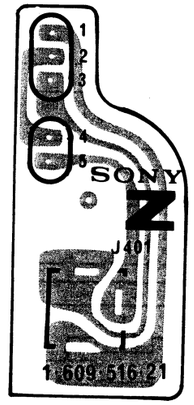
L904

DY

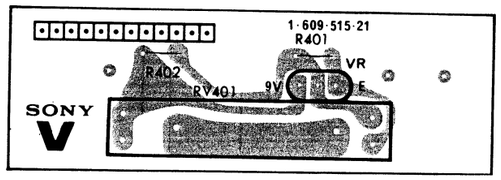
PRINTED WIRING BOARDS

Note: All mounting diagrams are viewed from conductor side.

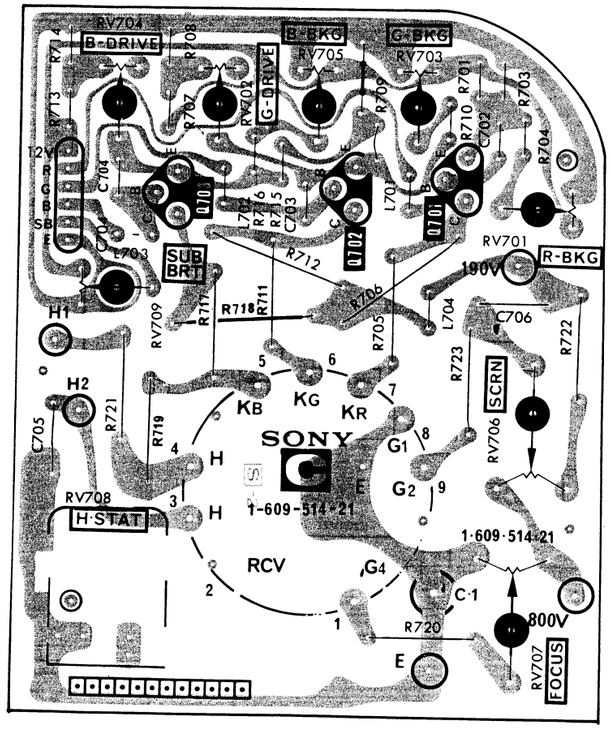
Z [JACK]



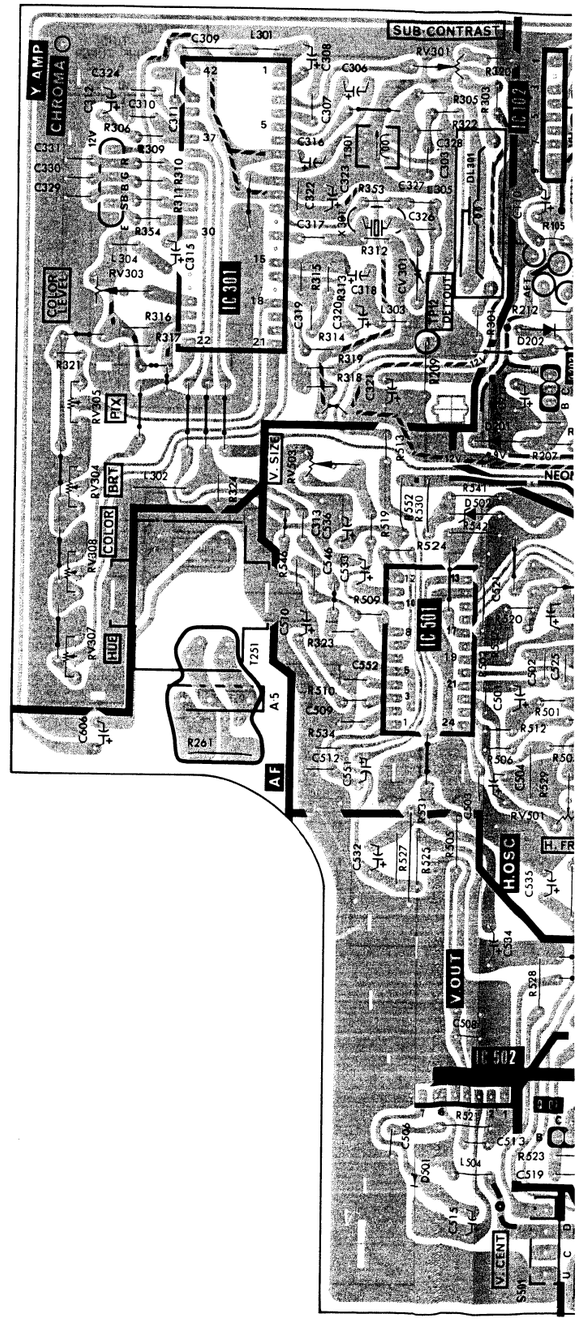
V [VOLUME]



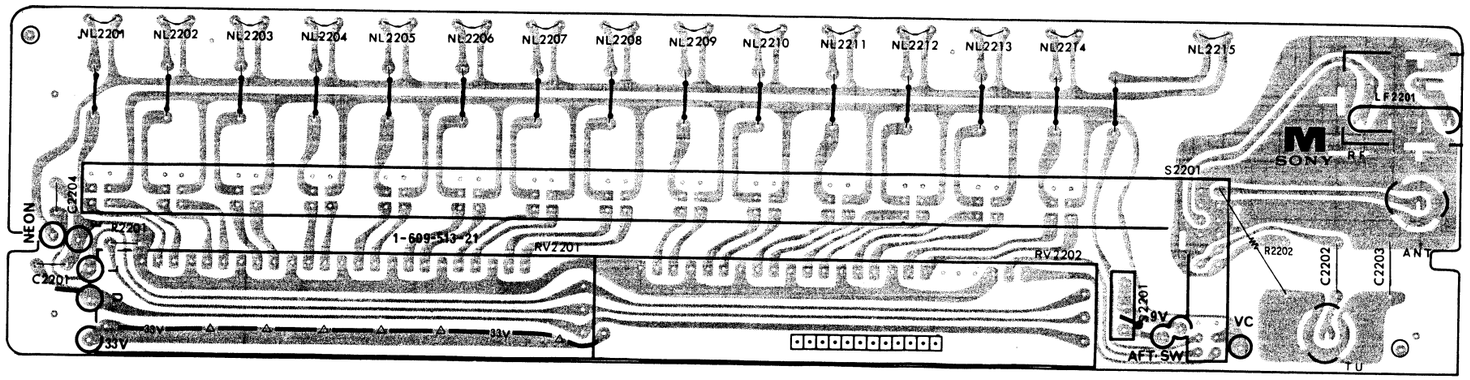
C [R.G.B. OUT H. STAT]



A [BAND SELECT, VIF, SIF, VIDEO AMP, Y CHROMA, SYNC F/V OSC, H.V OUT, AF OUT POWER SUPPLY]

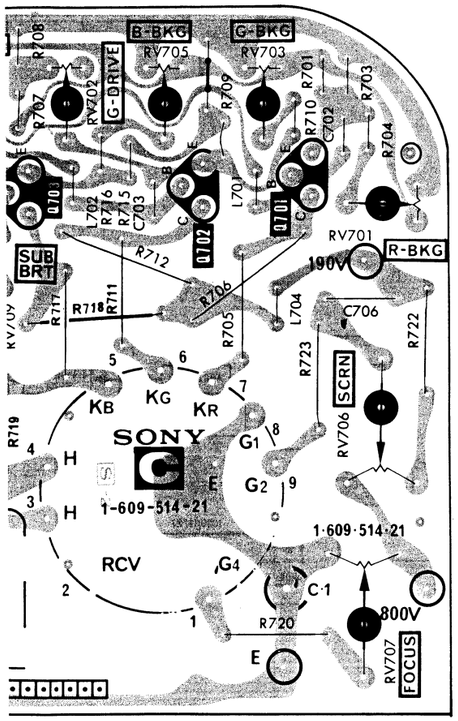


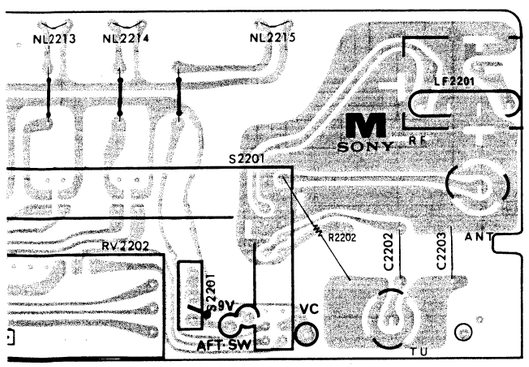
M [CHANNEL SELECT CHANNEL INDICATOR]

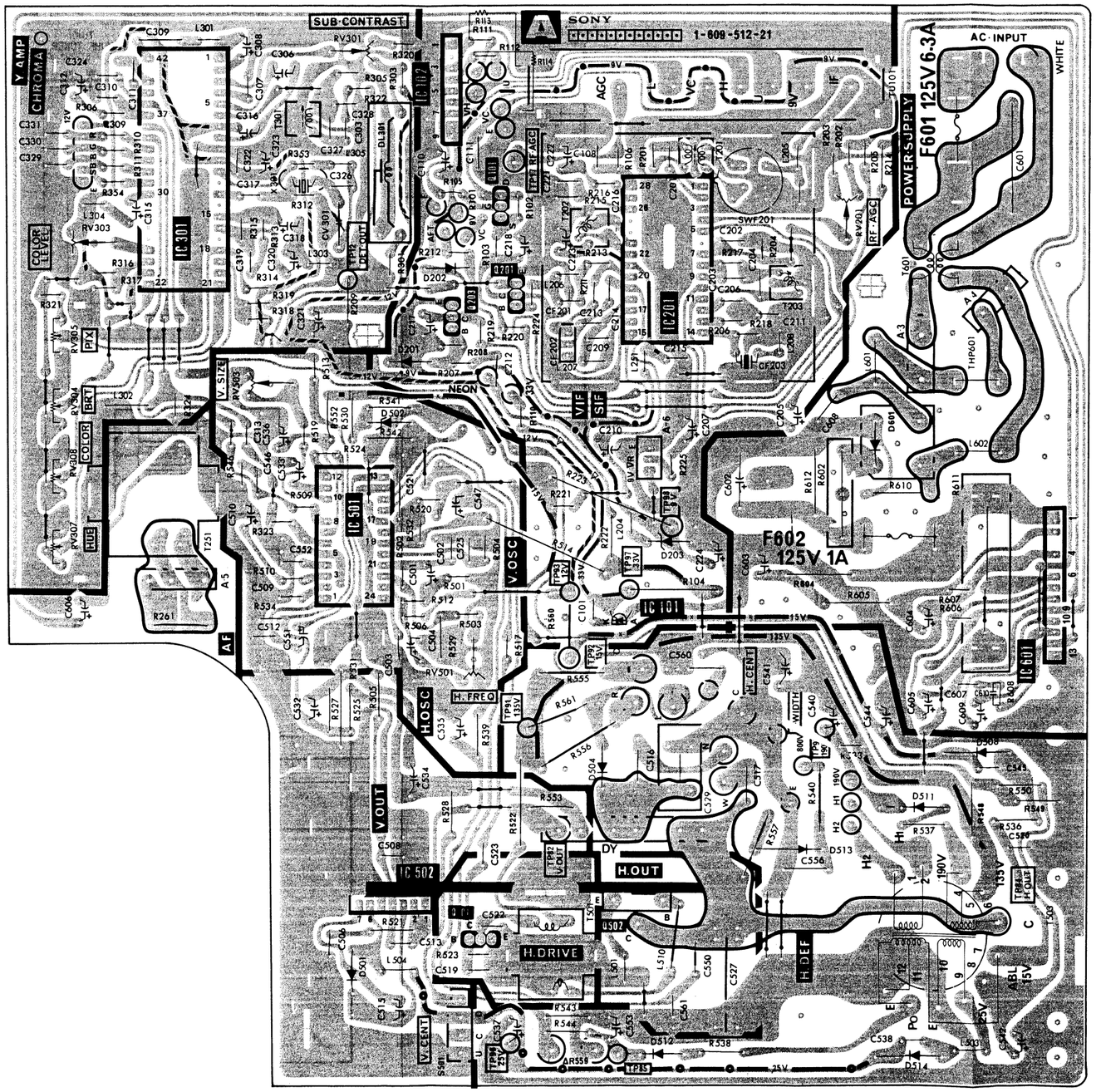


H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W

A BAND SELECT, VIF, SIF, VIDEO AMP, Y CHROMA, SYNC F/V OSC, H.V OUT, AF OUT POWER SUPPLY





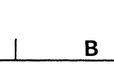


IC · Q	D	ADJ	TP
		RV301	
IC102			
IC301			17
101		CV301	
		RV201	
IC201		RV303	12
201	202		
203			
		RV305	
	201	RV503	
	502	RV304	
	601		
		RV308	
			98
IC501	203	RV307	93 97
IC601			
IC101			
		RV501	92
			91
			95
	508		
	511		
	513		82
			84
IC502			
501 502			
	501		
	512 514		85 96

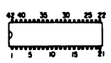
SCHEMATIC DIAGRAM

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics.
- All resistors are in ohms, ¼W unless otherwise noted. kΩ = 1000Ω, MΩ = 1000kΩ
- ▭: nonflamable resistor.
- △ : internal component.
- ▭: panel designation.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- The components identified by ⊠ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- When replacing components identified by ◪ mark the necessary adjustments indicated. If results do not meet the specified value, change the component identified by ⊠ and repeat the adjustment until the specified value is achieved.
- Refer to the service manual for the adjustment of components identified by ⊠.
- All voltages are in V.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken with a 10MΩ digital multimeter.
- ▭: adjustment for repair.
- Readings are taken with a color-bar signal input.
- Voltage variations may be noted due to normal production tolerances.
- Do not touch pin (24) of marked ♦ on A board with probe of digital multimeter.
  It will result in off position of the set.
- —: B+ bus.
- – – –: B– bus.

CX20013

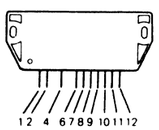


CX20014
CX848

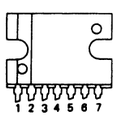


LA7920

STK563F



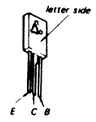
μPC1378H-L



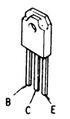
μPC574J

2SA1048
2SA1115

2SC2688



2SD1396

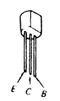


2SK108

10E2
ERB12-02RK
ES1F
GP08D
RGP01-17
RGP10G

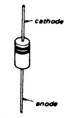
2SA1175

2SC2230A
2SC2610BK

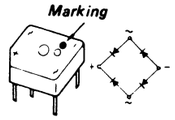


2SC2278

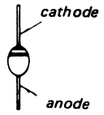
ER24-06S
SIB01-02



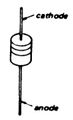
S3WB60S
S3WB60Z



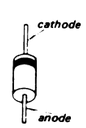
V19C
V19CSS
V19E



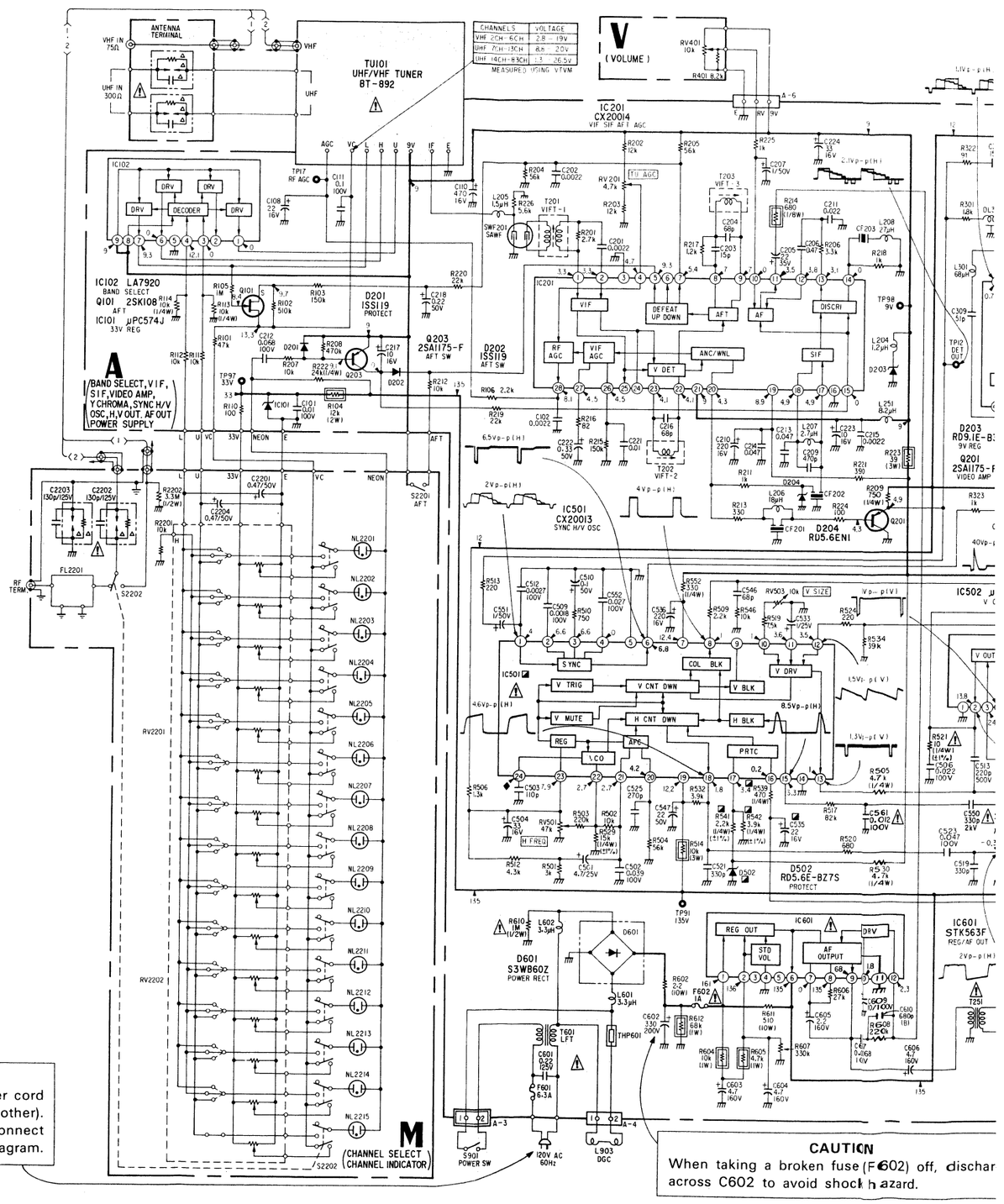
1SS119
1SS120
1SS148



ISS133 **RD9.1E-B3**
RD5.6E-B2Z **RD5.6EN1**
RD5.6E-BZ7S



CAUTION
This set is equipped with a polarized ac power cord plug (one blade of the plug is wider than the other). When replacing the ac power cord, be sure to connect it with specified part number as shown in this diagram.



CAUTION
Be sure to connect the connector C-1 for safety.

CHANNELS	VOLTAGE
VHF 2CH-6CH	2.8 – 19V
UHF 7CH-13CH	8.8 – 20V
UHF 14CH-83CH	1.5 – 26.5V

MEASURED USING VTVM

CAUTION
When taking a broken fuse (F602) off, discharge across C602 to avoid shock hazard.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

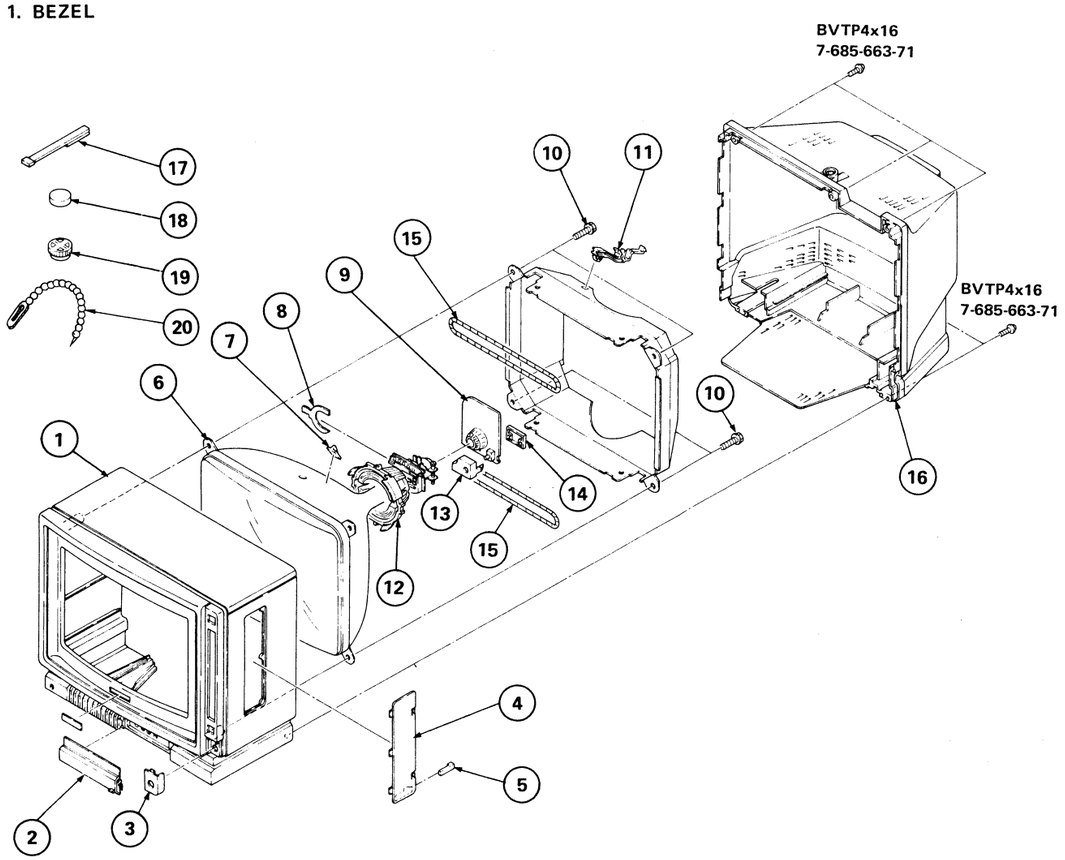
⊠ : See page 16

5. EXPLODED VIEWS

NOTE:
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " ♦ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

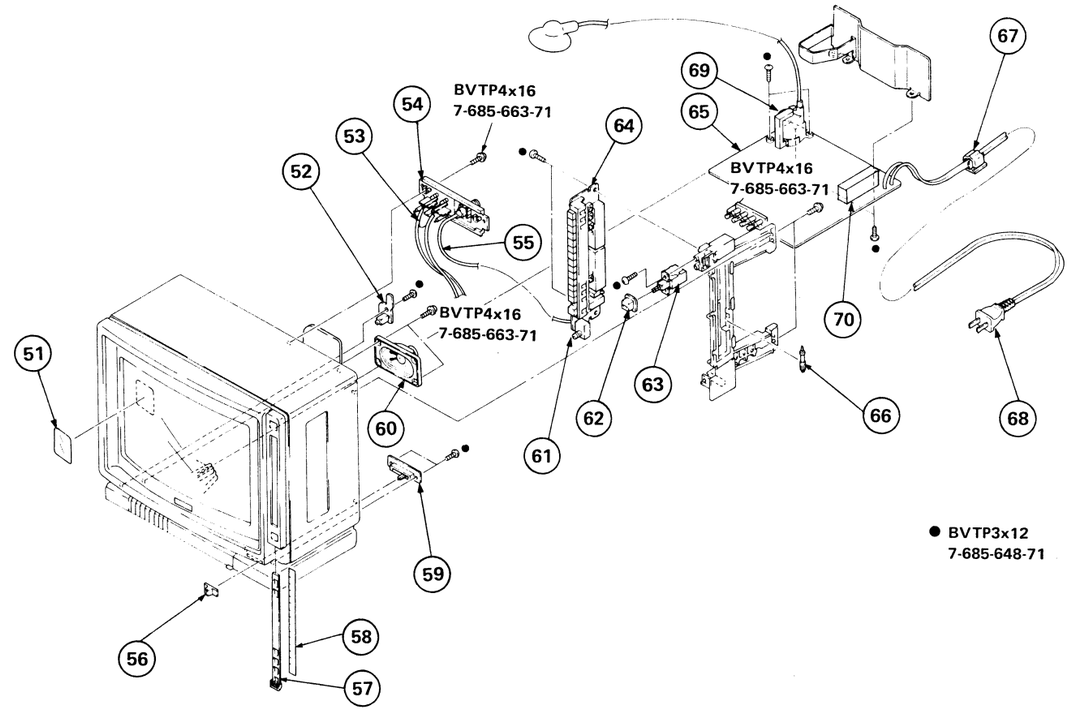
The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

1. BEZEL



No.	Part No.	Description	Remark
1	X-4366-503-2	BEZEL ASSY (KV-1331 MODEL)	2
	X-4366-503-0	BEZEL ASSY (KV-1332 MODEL)	2
2	4-365-821-00	DOOR, CONTROL	
3	4-365-817-51	COVER, TERMINAL (KV-1331 MODEL)	
	4-365-817-41	COVER, TERMINAL (KV-1332 MODEL)	
4	X-4366-502-2	DOOR ASSY, PRESET (KV-1331 MODEL)	5
	X-4366-502-0	DOOR ASSY, PRESET (KV-1332 MODEL)	5
5	4-365-105-00	KNOB, AFT	
6	⚠ 8-735-550-05	CRT (A34JBU00X)	
7	3-703-003-00	SPACER, DY	
8	1-452-277-00	MAGNET, BMC	
9	♦: A-1330-417-A	C BOARD, COMPLETE	
10	4-365-808-00	SCREW (5), TAPPING	
11	♦: 4-346-339-00	HOLDER, HV CABLE	
12	⚠ 1-451-234-00	DEFLECTION YOKE (SY-125A)	
13	♦: 4-365-803-00	COVER (MAIN), CV CONTROL	
14	♦: 4-365-804-00	COVER (REAR LID), CV CONTROL	
15	⚠ 1-426-146-00	COIL, DEGAUSSING	
16	4-366-506-00	COVER, BACK (KV-1332 MODEL)	
16	4-366-506-11	COVER, BACK (KV-1331 MODEL)	
17	X-4309-608-0	PERMALLOY ASSY, CONVERGENCE	
18	1-452-032-00	MAGNET, DISK 10mmφ	
19	1-452-094-00	MAGNET, ROTATABLE DISK, 15mmφ	
20	4-308-870-00	CLIP, LEAD WIRE	

2. CABINET

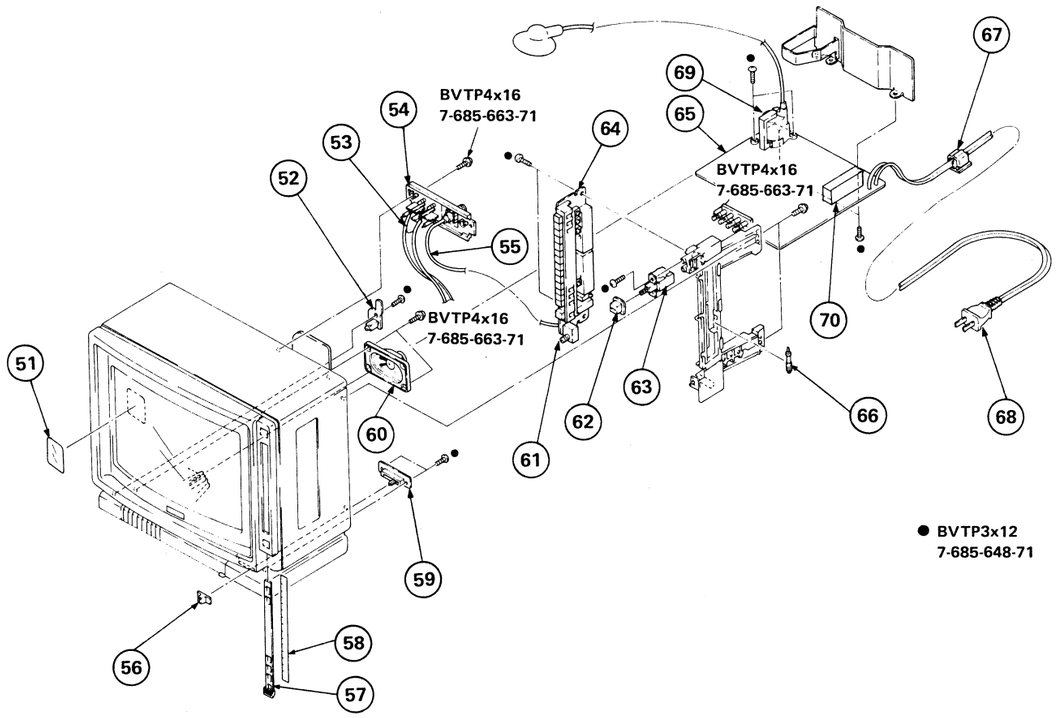


● BVTP3x12
7-685-648-71

No.	Part No.	Description	Remark
51	3-703-705-01	STICKER, SONY SYMBOL (30)	
52	♦: 1-609-516-21	Z BOARD	
53	♦: 1-556-375-21	FEEDER (WITH TERMINAL)	
54	⚠ 1-536-790-21	TERMINAL BOARD ASSY, ANTENNA	
55	♦: 1-556-870-00	CABLE (WITH F CONTACT)	
56	4-365-801-00	KNOB, CONTROL	
57	4-365-819-01	HOLDER, LABEL (KV-1332 MODEL)	
58	4-366-505-01	LABEL (A), INDICATOR (KV-1332 MODEL)	
59	♦: 1-609-515-21	V BOARD	
60	1-503-239-00	SPEAKER	
61	1-562-289-00	CONTACT, F	
62	4-365-802-00	BUTTON, POWER	
63	⚠ 1-554-471-00	SWITCH, PUSH (AC POWER)	
64	♦: 1-609-513-00	M BOARD	
65	♦: A-1295-697-A	A BOARD, COMPLETE	
66	4-365-250-00	SCREWDRIVER, PRESET	
67	⚠ 4-022-115-00	HOLDER, AC CORD	
68	⚠ 1-551-603-00	CORD, POWER	
69	⚠ 1-439-314-00	TRANSFORMER ASSY FLYBACK	
70	⚠ 1-463-445-00	TUNER, ET (BT-892)	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

2. CABINET



No.	Part No.	Description	Remark
51	3-703-705-01	STICKER, SONY SYMBOL (30)	
52	♦:1-609-516-21	Z BOARD	
53	♦:1-556-375-21	FEEDER (WITH TERMINAL)	
54	⚠♦:1-536-790-21	TERMINAL BOARD ASSY, ANTENNA	
55	♦:1-556-870-00	CABLE (WITH F CONTACT)	
56	4-365-801-00	KNOB, CONTROL	
57	4-365-819-01	HOLDER, LABEL (KV-1332 MODEL)	
58	4-366-505-01	LABEL (A), INDICATOR (KV-1332 MODEL)	
59	♦:1-609-515-21	V BOARD	
60	1-503-239-00	SPEAKER	
61	1-562-289-00	CONTACT, F	
62	4-365-802-00	BUTTON, POWER	
63	⚠.1-554-471-00	SWITCH, PUSH (AC POWER)	
64	♦:1-609-513-00	M BOARD	
65	♦:A-1295-697-A	A BOARD, COMPLETE	
66	4-365-250-00	SCREWDRIVER, PRESET	
67	⚠.4-022-115-00	HOLDER, AC CORD	
68	⚠.1-551-603-00	CORD, POWER	
69	⚠ 1-439-314-00	TRANSFORMER ASSY FLYBACK	
70	⚠ 1-463-445-00	TUNER, ET (BT-892)	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

A

6. ELECTRICAL PARTS LIST

NOTE:

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

- Items marked " ♦ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS
- All resistors are in ohms
- F : nonflammable

CAPACITORS
- MF : μF, PF : μμF

COILS
- MMH : mH, UH : μH

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
	♦:A-1295-697-A	A BOARD, COMPLETE	
		**********	
	♦:1-508-784-00	1P PLUG	
	♦:1-508-784-00	1P PLUG	
	♦:1-508-784-00	1P PLUG	
	♦:1-564-038-00	CONNECTOR PLUG, DY (MINI) 6P	
	♦:1-941-001-01	CONNECTOR ASSY, MINIATURE 1P	
	♦:1-941-001-02	CONNECTOR ASSY, MINIATURE 1P	
	♦:4-363-404-00	HOLDER, IC	
	4-363-414-00	SPACER, MICA	
	♦:4-365-811-00	CASE (MAIN), SHIELD, VIF	
	♦:4-365-812-00	LID, UPPER, SHIELD CASE, VIF	
	♦:4-365-813-00	LID, BOTTOM, SHIELD CASE, VIF	
		CONNECTOR	
A3	♦:1-506-371-00	2P PLUG (L)	
A4	♦:1-508-786-00	2P PLUG (M)	
A5	♦:1-508-765-00	3P PLUG (M)	
A6	♦:1-560-123-00	PLUG, CONNECTOR (2.5MM) 3P	
		CAPACITOR	
C101	1-108-377-00	MYLAR 0.01MF 10% 100V	
C102	1-102-121-00	CERAMIC 0.0022MF 10% 50V	
C108	1-123-330-00	ELECT 22MF 20% 16V	
C110	1-123-323-00	ELECT 470MF 20% 16V	
C111	1-108-389-00	MYLAR 0.1MF 10% 100V	
C201	1-102-121-00	CERAMIC 0.0022MF 10% 50V	
C202	1-102-121-00	CERAMIC 0.0022MF 10% 50V	
C203	1-102-851-00	CERAMIC 15PF 5% 50V	
C204	1-102-525-00	CERAMIC 68PF 5% 50V	
C205	1-123-342-00	ELECT 22MF 20% 35V	
C206	1-123-021-00	ELECT 0.47MF 30% 50V	
C207	1-123-380-00	ELECT 1MF 20% 50V	
C209	1-102-824-00	CERAMIC 470PF 5% 50V	
C210	1-123-321-00	ELECT 220MF 20% 16V	
C211	1-108-242-00	MYLAR 0.022MF 10% 50V	
C212	1-108-387-00	MYLAR 0.068MF 10% 100V	
C213	1-161-021-00	CERAMIC 0.047MF 10% 25V	
C214	1-161-021-00	CERAMIC 0.047MF 10% 25V	
C215	1-102-121-00	CERAMIC 0.0022MF 10% 50V	
C216	1-102-525-00	CERAMIC 68PF 5% 50V	
C217	1-123-356-00	ELECT 10MF 20% 16V	
C218	1-123-447-00	ELECT 0.22MF 20% 50V	
C221	1-161-013-00	CERAMIC 0.01MF 10% 25V	
C222	1-123-286-00	ELECT 0.33MF 20% 50V	
C223	1-123-356-00	ELECT 10MF 20% 16V	
C224	1-123-318-00	ELECT 33MF 20% 16V	
C303	1-102-108-00	CERAMIC 150PF 10% 50V	
C306	1-123-447-00	ELECT 0.22MF 20% 50V	
C307	1-161-047-00	CERAMIC 0.0047MF 10% 50V	
C308	1-123-330-00	ELECT 22MF 20% 16V	
C309	1-101-882-00	CERAMIC 51PF 5% 50V	

Ref.No	Part No.	Description	Remark
C310	1-161-043-00	CERAMIC 0.0022MF 10% 50V	
C311	1-102-953-00	CERAMIC 18PF 5% 50V	
C312	1-123-381-00	ELECT 2.2MF 20% 50V	
C313	1-108-371-00	MYLAR 0.0033MF 10% 100V	
C315	1-123-286-00	ELECT 0.33MF 20% 50V	
C316	1-123-447-00	ELECT 0.22MF 20% 50V	
C317	1-102-074-00	CERAMIC 0.001MF 10% 50V	
C318	1-123-379-00	ELECT 0.47MF 20% 50V	
C319	1-121-259-51	ELECT 10MF 16V	
C320	1-123-379-00	ELECT 0.47MF 20% 50V	
C321	1-123-324-00	ELECT 1000MF 20% 16V	
C322	1-101-004-00	CERAMIC 0.01MF 50V	
C323	1-123-356-00	ELECT 10MF 20% 16V	
C324	1-161-043-00	CERAMIC 0.0022MF 10% 50V	
C326	1-102-865-00	CERAMIC 8PF 0.5PF 50V	
C327	1-102-973-00	CERAMIC 100PF 5% 50V	
C328	1-102-108-00	CERAMIC 150PF 10% 50V	
C329	1-101-888-00	CERAMIC 68PF 5% 50V	
C330	1-101-888-00	CERAMIC 68PF 5% 50V	
C331	1-101-888-00	CERAMIC 68PF 5% 50V	
C501	1-123-328-00	ELECT 4.7MF 20% 25V	
C502	1-108-384-00	MYLAR 0.039MF 10% 100V	
C503	1-102-922-00	CERAMIC 110PF 5% 50V	
C504	1-123-318-00	ELECT 33MF 20% 16V	
C506	1-108-381-00	MYLAR 0.022MF 10% 100V	
C508	1-108-375-00	MYLAR 0.0068MF 10% 100V	
C509	1-108-368-00	MYLAR 0.0018MF 10% 100V	
C510	1-123-586-00	ELECT 0.1MF 20% 50V	
C512	1-108-370-00	MYLAR 0.0027MF 10% 100V	
C513	1-102-244-00	CERAMIC 220PF 10% 500V	
C515	1-123-345-00	ELECT 100MF 20% 35V	
C516	1-108-429-00	MYLAR 0.047MF 10% 200V	
C517	1-102-154-00	CERAMIC 180PF 20% 2KV	
C519	1-102-112-00	CERAMIC 330PF 10% 50V	
C520	1-102-030-00	CERAMIC 330PF 10% 500V	
C521	1-102-112-00	CERAMIC 330PF 10% 50V	
C522	1-102-030-00	CERAMIC 330PF 10% 500V	
C523	1-108-385-00	MYLAR 0.047MF 10% 100V	
C525	1-102-980-00	CERAMIC 270PF 5% 50V	
C527	⚠.1-136-063-00	FILM 0.0055MF 3% 1.4KV	
C529	1-136-136-00	FILM 0.24MF 5% 200V	
C532	1-123-328-00	ELECT 4.7MF 20% 25V	
C533	1-131-498-91	TANTALUM 1MF 10% 25V	
C534	1-124-190-00	ELECT 680MF 10% 35V	
C535	1-123-330-00	ELECT 22MF 20% 16V	
C536	1-123-321-00	ELECT 220MF 20% 16V	
C537	1-123-348-00	ELECT 470MF 20% 35V	
C538	1-102-212-00	CERAMIC 820PF 10% 500V	
C540	1-123-384-00	ELECT 10MF 20% 100V	
C541	1-123-024-00	ELECT 33MF 160V	
C542	⚠.1-121-246-00	ELECT 4.7MF 160V	
C544	1-123-335-00	ELECT 330MF 20% 25V	
C545	1-102-212-00	CERAMIC 820PF 10% 500V	

Ref.No	Part No.	Description			Remark
RV503	1-228-724-00	RES, ADJ, CERAMIC CARBON 10K			
		SWITCH			
S501	1-554-186-00	SWITCH, LEVER			
		FILTER			
SWF201	1-404-227-61	SAWF			
		TRANSFORMER			
T201	1-404-466-00	VIFT 44MHZ			
T201	1-404-466-00	VIFT 44MHZ			
T202	1-404-467-00	COIL, VIF			
T202	1-404-467-00	COIL, VIF			
T203	1-404-467-00	COIL, VIF			
T203	1-404-467-00	COIL, VIF			
T251 ⚠	1-427-530-00	TRANSFORMER, OUTPUT			
T301	1-426-138-00	TRANSFORMER, INPUT			
T301	1-426-138-00	TRANSFORMER, INPUT			
T501	1-437-090-00	HDT			
T501	1-437-090-00	HDT			
T601 ⚠	1-421-357-31	TRANSFORMER, LINE FILTER			
		THERMISTOR			
⚠THP601	1-800-686-31	THERMISTOR (POSITIVE)			
		CRYSTAL			
X301	1-527-722-00	OSCILLATOR, CRYSTAL			
**********					
♣:	1-609-513-00	M BOARD			
		*******			
	1-519-262-31	LAMP, NEON			
♣:	1-556-835-00	CABLE, PIN (MT TYPE)			
		CAPACITOR			
C2201	1-123-610-00	ELECT	0.47MF	20%	50V
C2202 ⚠	1-161-904-00	CERAMIC	130PF		125V
C2203 ⚠	1-161-904-00	CERAMIC	130PF		125V
C2204	1-123-379-00	ELECT	0.47MF	20%	50V
		FILTER			
FL2201	1-235-237-00	FILTER, LOW PASS			
		RESISTOR			
R2201	1-247-855-00	CARBON	10K	5% 1/6W	
R2202	1-202-725-00	SOLID	3.3M	10% 1/2W	
		VARIABLE RESISTOR			
RV2201	1-230-115-00	VOLUME BLOCK, PRESET			
RV2202	1-230-116-00	VOLUME BLOCK, PRESET			

Ref.No	Part No.	Description				Remark
		SWITCH				
S2201	1-552-437-00	SWITCH, LEVER				
S2202	1-554-530-00	SWITCH, TUNING (14 KEY)				
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♣:	A-1330-417-A	C BAORD, COMPLETE				
		**********				
♣:	1-609-514-21	C BOARD				
	1-526-762-00	SOCKET, CRT				
		CAPACITOR				
C702	1-102-112-00	CERAMIC	330PF	10%	50V	
C703	1-102-112-00	CERAMIC	330PF	10%	50V	
C704	1-102-112-00	CERAMIC	330PF	10%	50V	
C705	1-162-116-00	CERAMIC	680PF	10%	2KV	
C706	1-129-714-00	FILM	0.01MF	10%	630V	
		COIL				
L701	1-408-450-11	MICRO INDUCTOR 47UH				
L702	1-408-450-11	MICRO INDUCTOR 47UH				
L703	1-408-450-11	MICRO INDUCTOR 47UH				
L704	1-408-424-00	MICRO INDUCTOR 180UH				
		TRANSISTOR				
Q701	8-729-322-78	TRANSISTOR 2SC2278				
Q702	8-729-322-78	TRANSISTOR 2SC2278				
Q703	8-729-322-78	TRANSISTOR 2SC2278				
		RESISTOR				
R701	1-247-852-00	CARBON	7.5K	5%	1/6W	
R703	1-247-817-00	CARBON	270	5%	1/6W	
R704	1-247-844-00	CARBON	3.6K	5%	1/6W	
R705	1-202-824-00	SOLID	3.3K		1/2W	
R706	1-206-692-00	METAL OXIDE	15K	5%	2W	F
R707	1-247-846-00	CARBON	4.3K	5%	1/6W	
R708	1-247-826-00	CARBON	620	5%	1/6W	
R709	1-247-821-00	CARBON	390	5%	1/6W	
R710	1-247-844-00	CARBON	3.6K	5%	1/6W	
R711	1-202-824-00	SOLID	3.3K		1/2W	
R712	1-206-692-00	METAL OXIDE	15K	5%	2W	F
R713	1-247-846-00	CARBON	4.3K	5%	1/6W	
R714	1-247-826-00	CARBON	620	5%	1/6W	
R715	1-247-821-00	CARBON	390	5%	1/6W	
R716	1-247-844-00	CARBON	3.6K	5%	1/6W	
R717	1-202-824-00	SOLID	3.3K		1/2W	
R718	1-206-692-00	METAL OXIDE	15K	5%	2W	F
R719	1-202-842-51	SOLID	220K		1/2W	
R720	1-202-719-00	SOLID	1M	10%	1/2W	
R721	1-212-359-61	METAL OXIDE	0.82	5%	1W	F
R722	1-202-848-00	SOLID	680K		1/2W	
R723	1-202-838-00	SOLID	100K		1/2W	

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Ref.No	Part No.	Description				Remark
C546	1-101-888-00	CERAMIC	68PF	5%	50V	
C547	1-123-357-00	ELECT	22MF	20%	50V	
C550 ⚠	1-102-155-00	CERAMIC	330PF	20%	2KV	
C551	1-123-380-00	ELECT	1MF	20%	50V	
C552	1-108-382-00	MYLAR	0.027MF	10%	100V	
C553	1-123-356-00	ELECT	10MF	20%	50V	
C556	1-102-223-00	CERAMIC	0.0047MF	20%	1.6KV	
C560	1-130-640-00	FILM	0.47MF	5%	50V	
C561 ⚠	1-108-627-11	MYLAR	0.012MF	10%	100V	
C601 ⚠	1-130-682-00	FILM	0.22MF	20%	125V	
C602	1-125-338-00	ELECT(BLOCK)	330MF	20%	200V	
C602	1-125-338-21	ELECT(BLOCK)	330MF	20%	200V	
C603	1-121-246-00	ELECT	4.7MF		160V	
C604	1-121-246-00	ELECT	4.7MF		160V	
C605	1-123-026-00	ELECT	2.2MF		160V	
C606	1-121-246-00	ELECT	4.7MF		160V	
C607	1-108-375-00	MYLAR	0.0068MF	10%	100V	
C609	1-123-384-00	ELECT	10MF	20%	100V	
C610	1-102-116-00	CERAMIC	680PF	10%	50V	

FILTER

CF201	1-409-332-00	CERAMIC TRAP (4.5MHZ)
CF202	1-527-943-00	FILTER, CERAMIC
CF203	1-404-469-00	DISCRIMINATOR, CERAMIC 4.5MHZ

TRIMMER

CV301	1-141-147-XX	CAP, TRIMMER

DIODE

D201	8-719-911-19	DIODE 1SS119
D202	8-719-911-19	DIODE 1SS119
D203	8-719-100-55	DIODE RD9.1E-B3
D204	8-719-102-70	DIODE RD5.6E-N1
D501	8-719-200-02	DIODE 10E2
D502	8-719-100-35	DIODE RD5.6E-B2
D504	8-719-200-02	DIODE 10E2
D508	8-719-901-93	DIODE V19E
D511	8-719-924-06	DIODE ERC24-06S
D512 ⚠	8-719-901-95	DIODE V19CSS
D513	8-719-300-65	DIODE ES1F
D514	8-719-901-93	DIODE V19E
D601	8-719-503-06	DIODE S3WB60Z

DELAY LINE

DL301	1-415-240-00	DELAY LINE

FUSE

F601 ⚠	1-532-509-00	FUSE, GLASS TUBE 6.3A
	1-533-127-00	FUSE CLIP; F601
F602 ⚠	1-532-536-00	FUSE, GLASS-TUBE 1A
♦	1-533-146-00	HOLDER, FUSE; F602

IC

IC101	8-759-157-40	IC UPC574J
IC102	8-759-800-12	IC LA7920
IC201	8-752-001-40	IC CX20014
IC301	8-758-480-00	IC CX848
IC501 ⚠	8-752-001-30	IC CX20013
IC502	8-759-113-78	IC UPC1378H-L
IC601 ⚠	8-749-956-30	IC STK-563F

COIL

L204	1-408-398-00	MICRO INDUCTOR 1.2UH
L205	1-408-399-00	MICRO INDUCTOR 1.5UH
L206	1-408-412-00	MICRO INDUCTOR 18UH
L207	1-408-402-00	MICRO INDUCTOR 2.7UH
L208	1-408-414-00	MICRO INDUCTOR 27UH
L251	1-408-408-00	MICRO INDUCTOR 8.2UH
L301	1-408-419-00	MICRO INDUCTOR 68UH
L302	1-408-163-00	MICRO INDUCTOR 5.6MMH
L302	1-408-163-41	MICRO INDUCTOR 5.6MMH
L303	1-408-398-00	MICRO INDUCTOR 1.2UH
L304	1-408-398-00	MICRO INDUCTOR 1.2UH
L305	1-408-398-00	MICRO INDUCTOR 1.2UH
L501	1-407-365-00	COIL, CHOKE
L503	1-407-699-00	MICRO INDUCTOR 33UH
L504	1-407-695-00	MICRO INDUCTOR 15UH
L510	1-408-349-00	COIL, CHOKE
L601 ⚠	1-408-225-00	MICRO INDUCTOR 3.3UH
L602 ⚠	1-408-225-00	MICRO INDUCTOR 3.3UH

TRANSISTOR

Q101	8-729-600-12	TRANSISTOR 2SK108
Q201	8-729-117-54	TRANSISTOR 2SA1175
Q203	8-729-117-54	TRANSISTOR 2SA1175
Q501	8-729-213-11	TRANSISTOR 2SC2230A
Q502	8-729-801-71	TRANSISTOR 2SD1396

RESISTOR

R101	1-247-871-00	CARBON	47K	5%	1/6W	
R102	1-247-896-00	CARBON	510K	5%	1/6W	
R103	1-247-883-00	CARBON	150K	5%	1/6W	
R104	1-206-690-00	METAL OXIDE	12K	5%	2W	F
R105	1-247-903-00	CARBON	1M	5%	1/6W	
R106	1-247-839-00	CARBON	2.2K	5%	1/6W	
R110	1-247-807-00	CARBON	100	5%	1/6W	
R111	1-247-855-00	CARBON	10K	5%	1/6W	
R112	1-247-855-00	CARBON	10K	5%	1/6W	
R113	1-246-497-00	CARBON	10K	5%	1/4W	
R114	1-246-497-00	CARBON	10K	5%	1/4W	
R201	1-247-841-00	CARBON	2.7K	5%	1/6W	
R202	1-247-857-00	CARBON	12K	5%	1/6W	
R203	1-247-857-00	CARBON	12K	5%	1/6W	
R204	1-247-873-00	CARBON	56K	5%	1/6W	
R205	1-247-873-00	CARBON	56K	5%	1/6W	
R206	1-247-843-00	CARBON	3.3K	5%	1/6W	
R207	1-247-855-00	CARBON	10K	5%	1/6W	
R208	1-247-895-00	CARBON	470K	5%	1/6W	
R209	1-246-470-00	CARBON	750	5%	1/4W	

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Ref.No	Part No.	Description				Remark
R211	1-247-831-00	CARBON	1K	5%	1/6W	
R212	1-247-855-00	CARBON	10K	5%	1/6W	
R213	1-247-819-00	CARBON	330	5%	1/6W	
R214	1-246-994-00	CARBON	680	5%	1/8W	F
R215	1-247-883-00	CARBON	150K	5%	1/6W	
R216	1-247-805-00	CARBON	82	5%	1/6W	
R217	1-247-833-00	CARBON	1.2K	5%	1/6W	
R218	1-247-831-00	CARBON	1K	5%	1/6W	
R219	1-247-863-00	CARBON	22K	5%	1/6W	
R220	1-247-863-00	CARBON	22K	5%	1/6W	
R221	1-247-821-00	CARBON	390	5%	1/6W	
R222	1-246-506-00	CARBON	24K	5%	1/4W	
R223	1-206-525-00	METAL OXIDE	39	5%	3W	F
R224	1-247-807-00	CARBON	100	5%	1/6W	
R225	1-247-831-00	CARBON	1K	5%	1/6W	
R226	1-247-849-00	CARBON	5.6K	5%	1/6W	
R261	1-202-359-11	SOLID	100	5%	1/4W	
R301	1-247-837-00	CARBON	1.8K	5%	1/6W	
R303	1-247-855-00	CARBON	10K	5%	1/6W	
R305	1-247-827-00	CARBON	680	5%	1/6W	
R306	1-247-855-00	CARBON	10K	5%	1/6W	
R309	1-247-815-00	CARBON	220	5%	1/6W	
R310	1-247-815-00	CARBON	220	5%	1/6W	
R311	1-247-815-00	CARBON	220	5%	1/6W	
R312	1-247-821-00	CARBON	390	5%	1/6W	
R313	1-247-829-00	CARBON	820	5%	1/6W	
R314	1-247-840-00	CARBON	2.4K	5%	1/6W	
R315	1-247-863-00	CARBON	22K	5%	1/6W	
R316	1-247-844-00	CARBON	3.6K	5%	1/6W	
R317	1-247-850-00	CARBON	6.2K	5%	1/6W	
R318	1-247-855-00	CARBON	10K	5%	1/6W	
R319	1-247-852-00	CARBON	7.5K	5%	1/6W	
R320	1-247-837-00	CARBON	1.8K	5%	1/6W	
R321	1-247-872-00	CARBON	51K	5%	1/6W	
R322	1-247-806-00	CARBON	91	5%	1/6W	
R323	1-247-831-00	CARBON	1K	5%	1/6W	
R324	1-247-857-00	CARBON	12K	5%	1/6W	
R353	1-247-807-00	CARBON	100	5%	1/6W	
R354	1-247-831-00	CARBON	1K	5%	1/6W	
R501	1-247-842-00	CARBON	3K	5%	1/6W	
R502	1-247-855-00	CARBON	10K	5%	1/6W	
R503	1-247-887-00	CARBON	220K	5%	1/6W	
R504	1-247-873-00	CARBON	56K	5%	1/6W	
R505	1-246-489-00	CARBON	4.7K	5%	1/4W	
R506	1-247-834-00	CARBON	1.3K	5%	1/6W	
R509	1-247-839-00	CARBON	2.2K	5%	1/6W	
R510	1-247-828-00	CARBON	750	5%	1/6W	
R512	1-247-846-00	CARBON	4.3K	5%	1/6W	
R513	1-247-815-00	CARBON	220	5%	1/6W	
R514	1-206-749-00	METAL OXIDE	10K	5%	3W	F
R517	1-247-877-00	CARBON	82K	5%	1/6W	
R519	1-247-852-00	CARBON	7.5K	5%	1/6W	
R520	1-247-827-00	CARBON	680	5%	1/6W	

Ref.No	Part No.	Description				Remark
R521 ⚠	1-214-681-00	METAL	10	1%	1/4W	
R522 ⚠	1-206-676-00	METAL OXIDE	3.3K	5%	2W	F
R523 ⚠	1-247-831-00	CARBON	1K	5%	1/6W	
R524	1-247-815-00	CARBON	220	5%	1/6W	
R525	1-246-504-00	CARBON	20K	5%	1/4W	
R527	1-246-495-00	CARBON	8.2K	5%	1/4W	
R528	1-246-475-00	CARBON	1.2K	5%	1/4W	
R529	1-214-757-00	METAL	15K	1%	1/4W	
R530	1-246-489-00	CARBON	4.7K	5%	1/4W	
R531	1-212-362-00	METAL OXIDE	1.5	5%	1W	F
R532	1-247-845-00	CARBON	3.9K	5%	1/6W	
R533	1-247-879-00	CARBON	100K	5%	1/6W	
R534	1-247-869-00	CARBON	39K	5%	1/6W	
R536	1-247-021-00	CARBON	1.5	5%	1/8W	F
R537	1-247-021-00	CARBON	1.5	5%	1/8W	F
R538	1-247-021-00	CARBON	1.5	5%	1/8W	F
R539	1-246-465-00	CARBON	470	5%	1/4W	
R540	1-202-842-51	SOLID	220K		1/2W	
R541	1-214-737-00	METAL	2.2K	1%	1/4W	
R542	1-214-743-00	METAL	3.9K	1%	1/4W	
R543	1-214-739-00	METAL	2.7K	1%	1/4W	
R544	1-214-755-00	METAL	12K	1%	1/4W	
R546	1-247-855-00	CARBON	10K	5%	1/6W	
R548	1-214-912-00	METAL	91K	1%	1/2W	
R549	1-246-495-00	CARBON	8.2K	5%	1/4W	
R550	1-247-614-00	CARBON	3.3K	5%	1/8W	
R552	1-246-461-00	CARBON	330	5%	1/4W	
R553	1-246-471-00	CARBON	820	5%	1/4W	
R555	1-213-146-00	METAL OXIDE	1.8K	5%	1W	F
R556	1-206-664-00	METAL OXIDE	1K	5%	2W	F
R557	1-213-146-00	METAL OXIDE	1.8K	5%	1W	F
⊠R559 ⚠		CARBON			1/4W	
R560	1-213-125-00	METAL OXIDE	33	5%	1W	F
R561	1-244-894-51	CARBON	7.5K	5%	1/2W	
R602	1-205-707-00	CEMENTED	2.2		10W	
R604	1-213-155-00	METAL OXIDE	10K	5%	1W	F
R605	1-213-151-00	METAL OXIDE	4.7K	5%	1W	F
R606	1-247-865-00	CARBON	27K	5%	1/6W	
R607	1-247-891-00	CARBON	330K	5%	1/6W	
R608	1-247-887-00	CARBON	220K	5%	1/6W	
R610 ⚠	1-202-719-00	SOLID	1M	10%	1/2W	
R611	1-205-708-00	CEMENTED	510	5%	10W	
R612	1-214-599-00	METAL OXIDE	68K	5%	1W	F

VARIABLE RESISTOR

RV201	1-228-723-00	RES, ADJ, CERAMIC CARBON 4.7K
RV301	1-228-719-00	RES, ADJ, CERAMIC CARBON 470
RV303	1-228-724-00	RES, ADJ, CERAMIC CARBON 10K
RV304	1-230-086-00	RES, VAR, CARBON 10KX4
RV305	1-230-086-00	RES, VAR, CARBON 10KX4
RV307	1-230-086-00	RES, VAR, CARBON 10KX4
RV308	1-230-086-00	RES, VAR, CARBON 10KX4
RV501	1-228-727-00	RES, ADJ, CERAMIC CARBON 47K

- The components identified by ⊠ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Ref.No	Part No.	Description	Remark
RV503	1-228-724-00	RES, ADJ, CERAMIC CARBON 10K	
		SWITCH	
S501	1-554-186-00	SWITCH, LEVER	
		FILTER	
SWF201	1-404-227-61	SAWF	
		TRANSFORMER	
T201	1-404-466-00	VIFT 44MHZ	
T201	1-404-466-00	VIFT 44MHZ	
T202	1-404-467-00	COIL, VIF	
T202	1-404-467-00	COIL, VIF	
T203	1-404-467-00	COIL, VIF	
T203	1-404-467-00	COIL, VIF	
T251 ⚠	1-427-530-00	TRANSFORMER, OUTPUT	
T301	1-426-138-00	TRANSFORMER, INPUT	
T301	1-426-138-00	TRANSFORMER, INPUT	
T501	1-437-090-00	HDT	
T501	1-437-090-00	HDT	
T601 ⚠	1-421-357-31	TRANSFORMER, LINE FILTER	
		THERMISTOR	
⚠THP601	1-800-686-31	THERMISTOR (POSITIVE)	
		CRYSTAL	
X301	1-527-722-00	OSCILLATOR, CRYSTAL	
**********			
♦	1-609-513-00	M BOARD *******	
	1-519-262-31	LAMP, NEON	
♦	1-556-835-00	CABLE, PIN (MT TYPE)	
		CAPACITOR	
C2201	1-123-610-00	ELECT 0.47MF 20% 50V	
C2202 ⚠	1-161-904-00	CERAMIC 130PF 125V	
C2203 ⚠	1-161-904-00	CERAMIC 130PF 125V	
C2204	1-123-379-00	ELECT 0.47MF 20% 50V	
		FILTER	
FL2201	1-235-237-00	FILTER, LOW PASS	
		RESISTOR	
R2201	1-247-855-00	CARBON 10K 5% 1/6W	
R2202	1-202-725-00	SOLID 3.3M 10% 1/2W	
		VARIABLE RESISTOR	
RV2201	1-230-115-00	VOLUME BLOCK, PRESET	
RV2202	1-230-116-00	VOLUME BLOCK, PRESET	

Ref.No	Part No.	Description	Remark
		SWITCH	
S2201	1-552-437-00	SWITCH, LEVER	
S2202	1-554-530-00	SWITCH, TUNING (14 KEY)	
**********			
♦	A-1330-417-A	C BAORD, COMPLETE **********	
♦	1-609-514-21	C BOARD	
	1-526-762-00	SOCKET, CRT	
		CAPACITOR	
C702	1-102-112-00	CERAMIC 330PF 10% 50V	
C703	1-102-112-00	CERAMIC 330PF 10% 50V	
C704	1-102-112-00	CERAMIC 330PF 10% 50V	
C705	1-162-116-00	CERAMIC 680PF 10% 2KV	
C706	1-129-714-00	FILM 0.01MF 10% 630V	
		COIL	
L701	1-408-450-11	MICRO INDUCTOR 47UH	
L702	1-408-450-11	MICRO INDUCTOR 47UH	
L703	1-408-450-11	MICRO INDUCTOR 47UH	
L704	1-408-424-00	MICRO INDUCTOR 180UH	
		TRANSISTOR	
Q701	8-729-322-78	TRANSISTOR 2SC2278	
Q702	8-729-322-78	TRANSISTOR 2SC2278	
Q703	8-729-322-78	TRANSISTOR 2SC2278	
		RESISTOR	
R701	1-247-852-00	CARBON 7.5K 5% 1/6W	
R703	1-247-817-00	CARBON 270 5% 1/6W	
R704	1-247-844-00	CARBON 3.6K 5% 1/6W	
R705	1-202-824-00	SOLID 3.3K 1/2W	
R706	1-206-692-00	METAL OXIDE 15K 5% 2W	F
R707	1-247-846-00	CARBON 4.3K 5% 1/6W	
R708	1-247-826-00	CARBON 620 5% 1/6W	
R709	1-247-821-00	CARBON 390 5% 1/6W	
R710	1-247-844-00	CARBON 3.6K 5% 1/6W	
R711	1-202-824-00	SOLID 3.3K 1/2W	
R712	1-206-692-00	METAL OXIDE 15K 5% 2W	F
R713	1-247-846-00	CARBON 4.3K 5% 1/6W	
R714	1-247-826-00	CARBON 620 5% 1/6W	
R715	1-247-821-00	CARBON 390 5% 1/6W	
R716	1-247-844-00	CARBON 3.6K 5% 1/6W	
R717	1-202-824-00	SOLID 3.3K 1/2W	
R718	1-206-692-00	METAL OXIDE 15K 5% 2W	F
R719	1-202-842-51	SOLID 220K 1/2W	
R720	1-202-719-00	SOLID 1M 10% 1/2W	
R721	1-212-359-61	METAL OXIDE 0.82 5% 1W	F
R722	1-202-848-00	SOLID 680K 1/2W	
R723	1-202-838-00	SOLID 100K 1/2W	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

C V Z

Ref.No	Part No.	Description	Remark
		VARIABLE RESISTOR	
RV701	1-230-105-00	RES, ADJ, CARBON 3.3K	
RV702	1-230-103-00	RES, ADJ, CARBON 2.2K	
RV703	1-230-104-00	RES, ADJ, CARBON 4.7K	
RV704	1-230-103-00	RES, ADJ, CARBON 2.2K	
RV705	1-230-104-00	RES, ADJ, CARBON 4.7K	
RV706	1-226-063-00	RES, ADJ, CARBON 2.2M	
RV707	1-226-114-00	RES, ADJ, METAL GLAZE 2.2M	
RV708 ⚠	1-230-164-00	RES, ADJ, METAL GLAZE 55M	
RV709	1-230-106-00	RES, ADJ, CARBON 10K	
**********			
♦	1-609-515-21	V BOARD *******	
		CONNECTOR	
A6	♦1-941-001-03	CONNECTOR ASSY 3P	
		RESISTOR	
R401	1-247-853-00	CARBON 8.2K 5% 1/6W	
		VARIABLE RESISTOR	
RV401	1-230-070-00	RES, VAR, SLIDE 10K	
**********			
♦	1-609-516-21	Z BOARD *******	
		CONNECTOR	
A5	♦1-941-003-01	CONNECTOR ASSY, MINIATURE 3P	
		JACK	
J401	1-507-864-00	JACK, EARPHONE	
**********			
		MISCELLANEOUS **********	
	1-452-032-00	MAGNET, DISK 10mmφ	
	1-452-094-00	MAGNET, ROTATABLE DISK, 15mmφ	
	1-452-277-00	MAGNET, BMC	
⚠	1-536-790-21	TERMINAL BOARD ASSY, ANTENNA	
⚠	1-551-603-00	CORD, POWER	
♦	1-556-375-21	FEEDER (WITH TERMINAL)	
♦	1-556-870-00	CABLE (WITH F CONTACT)	
	1-562-289-00	CONTACT, F	
♦	1-941-001-00	CONNECTOR ASSY, LARGE 1P	
♦	1-941-003-02	CONNECTOR ASSY, LARGE 2P	
L903 ⚠	1-426-146-00	COIL, DEGAUSSING	
L904 ⚠	1-451-234-00	DEFLECTION YOKE (SY-125A)	
S901 ⚠	1-554-471-00	SWITCH, PUSH (AC POWER)	
SP901	1-503-239-00	SPEAKER	
T503 ⚠	1-439-314-00	TRANSFORMER ASSY, FLYBACK	
TU101 ⚠	1-463-445-00	TUNER, ET (BT-892)	
V901 ⚠	8-735-550-05	CRT (A34JBU00X)	
**********			
		ACCESSORIES AND PACKING MATERIALS **********	
	Y-2063-103-0	AN-15 LOOP ANTENNA	
	1-501-276-00	ANTENNA, TELESCOPIC (AN-18)	
	1-504-034-32	EARPHONE, MAGNETIC (ME-20B)	
	1-561-335-00	CONNECTOR, ANTENNA (EAC-31)	
	1-562-322-00	ADAPTOR, CHANGE (PIN-F)	
	3-701-629-00	BAG, POLYETHYLENE	
	4-365-831-00	SHEET, PROTECTION	
	4-366-504-01	LABEL (B), INDICATOR	
	4-366-512-00	CUSHION (UPPER) (ASSY)	
	4-366-513-00	CUSHION (LOWER) (ASSY)	
	4-366-514-00	BOARD, SIDE	
	4-366-520-00	CARTON (ASSY) (KV-1331 MODEL)	
	4-366-522-00	CARTON (ASSY) (KV-1332 MODEL)	
	4-366-526-00	LABEL, SEALING	
	4-491-213-22	INSTRUCTION	
	4-491-680-01	SCHEMATIC DIAGRAM	
	4-493-793-21	MANUAL, INSTRUCTION	

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